Release Notes for the Catalyst 4500 Series Switch, Cisco IOS Release 12.2(40)SG

Current Release
12.2(40)SG—November 13, 2007

Previous Releases
12.2(37)SG1, 12.2(37)SG, 12.2(31)SGA5, 12.2(31)SGA4, 12.2(31)SGA3, 12.2(31)SGA2, 12.2(31)SGA1, 12.2(31)SGA, 12.2(31)SG3, 12.2(31)SG2, 12.2(31)SG1, 12.2(31)SG, 12.2(25)SG4, 12.2(25)SG3, 12.2(25)SG2, 12.2(25)SG1, 12.2(25)SG, 12.2(25)EWA13, 12.2(25)EWA12, 12.2(25)EWA11, 12.2(25)EWA10, 12.2(25)EWA9, 12.2(25)EWA8, 12.2(25)EWA7, 12.2(25)EWA6, 12.2(25)EWA5, 12.2(25)EWA4, 12.2(25)EWA3, 12.2(25)EWA2, 12.2(25)EWA1, 12.2(25)EW, 12.2(20)EWA4, 12.2(20)EWA3, 12.2(20)EWA2, 12.2(20)EWA1, 12.2(20)EWA, 12.2(20)EW4, 12.2(20)EW3, 12.2(20)EW2, 12.2(20)EW1, 12.2(20)EW, 12.2(18)EW7, 12.2(18)EW6, 12.2(18)EW5, 12.2(18)EW4, 12.2(18)EW3, 12.2(18)EW2, 12.2(18)EW1, 12.2(18)EW, 12.1(20)EW4, 12.1(20)EW3, 12.1(20)EW1, 12.1(20)EW, 12.1(19)EW3, 12.1(19)EW2, 12.1(19)EW1, 12.1(19)EW, 12.1(13)EW4, 12.1(13)EW3, 12.1(13)EW1, 12.1(13)EW, 12.1(12c)EW4, 12.1(12c)EW3, 12.1(12c)EW1, 12.1(12c)EW, 12.1(11b)EW1, 12.1(11b)EW, 12.1(8a)EW1, 12.1(8a)EW

These release notes describe the features, modifications, and caveats for the Cisco IOS software on the Catalyst 4500 series switch. The most current software release is Cisco IOS Release 12.2(40)SG.

The most current software release is Cisco IOS Release 12.2(40)SG. The most current release notes for this release is available on Cisco.com at this URL:

http://www.cisco.com/en/US/products/hw/switches/ps4324/prod_release_note09186a00801f5b1e.html

Note Although their *Release Notes* are unique, the 3 platforms (Catalyst 4500, Catalyst 4900 and Catalyst M4900), use the same *Software Configuration Guide*, *Command Reference Guide*, and *System Message Guide*. Refer to this location:

http://www.cisco.com/en/US/products/hw/switches/ps4324/tsd_products_support_series_home.html

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Cisco IOS Software Packaging for the Cisco Catalyst 4500 Series

A new Cisco IOS Software package for Cisco Catalyst 4500 Series Switches was introduced in Cisco IOS Software Release 12.2(25)SG. It is a new foundation for features and functionality and provides consistency across all Cisco Catalyst switches. The new Cisco IOS Software release train is designated as 12.2SG.

Prior Cisco Catalyst 4500 Series Cisco IOS Software images for the Cisco Catalyst 4500 Series Switches, formerly known as Basic Layer 3 and Enhanced Layer 3, now map to IP Base and Enterprise Services, respectively. BGP is now included in the Enterprise Services image. All currently shipping Cisco Catalyst 4500 software features based on Cisco IOS Software are supported in the IP Base image of Release 12.2(40)SG, with a few exceptions.

The IP Base image does not support enhanced routing features such as NSF/SSO, BGP, EIGRP, EIGRPv6, OSPF, OSPFv3, IS-IS, Internetwork Packet Exchange (IPX), AppleTalk, VRF-lite, and Policy-Based Routing (PBR). The IP Base image supports EIGRP-Stub for limited routing on Supervisor Engines II-Plus, II-Plus-TS, II-Plus-10GE, IV, V, V-10GE, and 6-E.

The Enterprise Services image supports all Cisco Catalyst 4500 Series software features based on Cisco IOS Software, including enhanced routing. Customers planning to enable BGP for Supervisor Engine IV, V, or V-10GE will no longer need to purchase a separate BGP license (FR-IRC4) because BGP is included in the Enterprise Services package.

Orderable Product Numbers:

- S45IPB-12240SG—Cisco IOS software for the Catalyst 4500 Series Supervisor Engines II-Plus, II-Plus-TS, II-Plus-10GE, IV, V, and V-10GE (IP Base image, without Crypto) (cat4500-ipbase-mz)
- S45IPBK9-12240SG—Cisco IOS software for the Catalyst 4500 Series Supervisor Engines II-Plus, II-Plus-TS, II-Plus-10GE, IV, V, and V-10GE (IP Base image with Triple Data Encryption Standard (3DES)) (cat4500-ipbasek9-mz)
- S45ES-12240SG—Cisco IOS software for the Catalyst 4500 Series Supervisor Engines IV, V, and V-10GE (Enterprise Services image with BGP support, without Crypto) (cat4500-entservices-mz)
- S45ESK9-12240SG—Cisco IOS software for the Catalyst 4500 Series Supervisor Engines IV, V, and V-10GE (Enterprise Services image with 3DES and BGP support) (cat4500-entservicesk9-mz)
- S45EIPB-12240SG—Cisco IOS software for the Catalyst 4500 Series Supervisor Engine 6-E (IP Base Image)

- S45IPBK9-12240SG—Cisco IOS software for the Catalyst 4500 Series Supervisor Engine 6-E (IP Base Image with 3DES) (cat4500-ipbasek9-mz)
- S45EES-12240SG—Cisco IOS software for the Catalyst 4500 Series Supervisor Engine 6-E (Enterprise Services image) (cat4500e-entservices-mz)
- S45EESK9-12240SG—Cisco IOS software for the Catalyst 4500 Series Supervisor Engine 6-E (Enterprise Services with 3DES image) (cat4500-entservicesk9-mz)
- S45IPB-12237SG—Cisco IOS software for the Catalyst 4500 Series Supervisor Engines II-Plus, II-Plus-TS, II-Plus-10GE, IV, V, and V-10GE (IP Base image) (cat4500-ipbase-mz)
- S45IPBK9-12237SG—Cisco IOS software for the Catalyst 4500 Series Supervisor Engines II-Plus, II-Plus-TS, II-Plus-10GE, IV, V, and V-10GE (IP Base image with Triple Data Encryption Standard (3DES)) (cat4500-ipbasek9-mz)
- S45ES-12237SG—Cisco IOS software for the Catalyst 4500 Series Supervisor Engines IV, V, and V-10GE (Enterprise Services image with BGP support) (cat4500-entservices-mz)
- S45ESK9-12237SG—Cisco IOS software for the Catalyst 4500 Series Supervisor Engines IV, V, and V-10GE (Enterprise Services image with 3DES and BGP support) (cat4500-entservicesk9-mz)
- S45IPB-12231SGA—Cisco IOS software for the Catalyst 4500 Series Supervisor Engines II-Plus, II-Plus-TS, II-Plus-10GE, IV, V, and V-10GE (IP Base image) (cat4500-ipbase-mz)
- S45IPBK9-12231SGA—Cisco IOS software for the Catalyst 4500 Series Supervisor Engines II-Plus, II-Plus-TS, II-Plus-10GE, IV, V, and V-10GE (IP Base image with Triple Data Encryption Standard (3DES)) (cat4500-ipbasek9-mz)
- S45ES-12231SGA—Cisco IOS software for the Catalyst 4500 Series Supervisor Engines IV, V, and V-10GE (Enterprise Services image with BGP support) (cat4500-entservices-mz)
- S45ESK9-12231SGA—Cisco IOS software for the Catalyst 4500 Series Supervisor Engines IV, V, and V-10GE (Enterprise Services image with 3DES and BGP support) (cat4500-entservicesk9-mz)
- S45IPB-12231SG—Cisco IOS software for the Catalyst 4500 Series Supervisor Engines II-Plus, II-Plus-TS, II-Plus-10GE, IV, V, and V-10GE (IP Base image) (cat4500-ipbase-mz)
- S45IPBK9-12231SG—Cisco IOS software for the Catalyst 4500 Series Supervisor Engines II-Plus, II-Plus-TS, II-Plus-10GE, IV, V, and V-10GE (IP Base image with Triple Data Encryption Standard (3DES)) (cat4500-ipbasek9-mz)
- S45ES-12231SG—Cisco IOS software for the Catalyst 4500 Series Supervisor Engines IV, V, and V-10GE (Enterprise Services image with BGP support) (cat4500-entservices-mz)
- S45ESK9-12231SG—Cisco IOS software for the Catalyst 4500 Series Supervisor Engines IV, V, and V-10GE (Enterprise Services image with 3DES and BGP support) (cat4500-entservicesk9-mz)
- S45IPB-12225SG—Cisco IOS software for the Catalyst 4500 Series Supervisor Engines II-Plus, II-Plus-TS, II+10GE, IV, V, and V-10GE (IP Base image) (cat4500-ipbase-mz)
- S45IPBK9-12225SG—Cisco IOS software for the Catalyst 4500 Series Supervisor Engines II-Plus, II-Plus-TS, IV, V, and V-10GE (IP Base image with Triple Data Encryption Standard (3DES)) (cat4500-ipbasek9-mz)
- S45ES-12225SG—Cisco IOS software for the Catalyst 4500 Series Supervisor Engines IV, V, and V-10GE (Enterprise Services image with BGP support) (cat4500-entservices-mz)
- S45ESK9-12225SG—Cisco IOS software for the Catalyst 4500 Series Supervisor Engines IV, V, and V-10GE (Enterprise Services image with 3DES and BGP support) (cat4500-entservicesk9-mz)
- S4KL3-12225EWA—Cisco IOS software for the Catalyst 4500 series switch, basic Layer 3 and voice software image (RIPv1, RIPv2, Static Routes, AppleTalk, and IPX Software Routing, Release 12.2(25)EWA (cat4000-i9s-mz.122-25.EWA)

Note We recommend that you load 12.2(31)SGA4.

- S4KL3E-12225EWA—Cisco IOS software for the Catalyst 4500 series switch, enhanced Layer 3 and voice software image including OSPF, IS-IS, and EIGRP, Release 12.2(25)EWA (cat4000-i5s-mz.122-25.EWA)
- S4KL3K9-12225EWA—Cisco IOS software for the Catalyst 4500 series switch, with 3DES strong encryption, basic Layer 3 and voice software image (SSHv1, SSHv2, RIPv1, RIPv2, static routes, AppleTalk, and IPX), Release 12.2(25)EWA (cat4000-i9k9s-mz.122-25.EWA)
- S4KL3EK9-12225EWA—Cisco IOS software for the Catalyst 4500 series switch, with 3DES strong encryption, enhanced Layer 3 and voice software image including (OSPF, IS-IS, IGRP, and EIGRP), Release 12.2(25)EWA (cat4000-i5k9s-mz.122-25.EWA)
- S4KL3-12220EWA—Cisco IOS software for the Catalyst 4500 series switch, basic Layer 3 and voice software image (RIPv1, RIPv2, Static Routes, AppleTalk, and IPX Software Routing, Release 12.2(20)EWA (cat4000-i9s-mz.122-20.EWA)
- S4KL3E-12220EWA—Cisco IOS software for the Catalyst 4500 series switch, enhanced Layer 3 and voice software image including OSPF, IS-IS, and EIGRP, Release 12.2(20)EWA (cat4000-i5s-mz.122-20.EWA)
- S4KL3K9-12220EWA—Cisco IOS software for the Catalyst 4500 series switch, with 3DES strong encryption, basic Layer 3 and voice software image (SSHv1, SSHv2, RIPv1, RIPv2, static routes, AppleTalk, and IPX), Release 12.2(20)EWA (cat4000-i9k9s-mz.122-20.EWA)
- S4KL3EK9-12220EWA—Cisco IOS software for the Catalyst 4500 series switch, with 3DES strong encryption, enhanced Layer 3 and voice software image including (OSPF, IS-IS, IGRP, and EIGRP), Release 12.2(20)EWA (cat4000-i5k9s-mz.122-20.EWA)
- S4KL3-12220EW—Cisco IOS software for the Catalyst 4500 series switch, basic Layer 3 and voice software image (RIPv1, RIPv2, Static Routes, AppleTalk, and IPX), Release Software Routing, Release 12.2(20)EW (cat4000-i9s-mz.122-20.EW)
- S4KL3E-12220EW—Cisco IOS software for the Catalyst 4500 series switch, enhanced Layer 3 and voice software image including OSPF, IS-IS, and EIGRP, Release 12.2(20)EW (cat4000-i5s-mz.122-20.EW)
- S4KL3K91-12220EW—Cisco IOS software for the Catalyst 4500 series switch, with 3DES strong encryption, basic Layer 3 and voice software image (SSHv1, SSHv2, RIPv1, RIPv2, static routes, AppleTalk, and IPX), Release 12.2(20)EW (cat4000-i9k91s-mz.122-20.EW)
- S4KL3EK91-12220EW—Cisco IOS software for the Catalyst 4500 series switch, with 3DES strong encryption, enhanced Layer 3 and voice software image including (OSPF, IS-IS, and EIGRP), Release 12.2(20)EW (cat4000-i5k91s-mz.122-20.EW)
- S4KL3-12218EW—Cisco IOS software for the Catalyst 4500 series switch, basic Layer 3 and voice software image (RIPv1, RIPv2, Static Routes, AppleTalk, and IPX), Release Software Routing, Release 12.2(18)EW (cat4000-i9s-mz.122-18.EW)
- S4KL3E-12218EW—Cisco IOS software for the Catalyst 4500 series switch, enhanced Layer 3 and voice software image including OSPF, IS-IS, and EIGRP, Release 12.2(18)EW (cat4000-i5s-mz.122-18.EW)
- S4KL3K91-12218EW—Cisco IOS software for the Catalyst 4500 series switch, with 3DES strong encryption, basic Layer 3 and voice software image (SSHv1, SSHv2, RIPv1, RIPv2, static routes, AppleTalk, and IPX), Release 12.2(18)EW (cat4000-i9k91s-mz.122-18.EW)

- S4KL3EK91-12218EW—Cisco IOS software for the Catalyst 4500 series switch, with 3DES strong encryption, enhanced Layer 3 and voice software image including (OSPF, IS-IS, and EIGRP), Release 12.2(18)EW (cat4000-i5k91s-mz.122-18.EW)
- S4KL3-12120EW—Cisco IOS software for the Catalyst 4500 series switch, basic Layer 3 and voice software image (RIPv1, RIPv2, Static Routes, AppleTalk, and IPX), Release Software Routing, Release 12.1(20)EW (cat4000-i9s-mz.121-20.EW)
- S4KL3E-12120EW—Cisco IOS software for the Catalyst 4500 series switch, Supervisor Engines III and IV, enhanced Layer 3 and voice software image including OSPF, IS-IS, IGRP, and EIGRP, Release 12.1(20)EW (cat4000-i5s-mz.121-20.EW)
- S4KL3K2-12120EW—Cisco IOS software for the Catalyst 4500 series switch, with 3DES strong encryption, basic Layer 3 and voice software image (SSHv1, SSHv2, RIPv1, RIPv2, static routes, AppleTalk, and IPX), Release 12.1(20)EW (cat4000-i9k2s-mz.121-20.EW)
- S4KL3EK2-12120EW—Cisco IOS software for the Catalyst 4500 series switch, Supervisor Engines III and IV with 3DES strong encryption, enhanced Layer 3 and voice software image including (OSPF, IS-IS, IGRP, and EIGRP), Release 12.1(20)EW (cat4000-i5k2s-mz.121-20.EW)
- S4KL3-12119EW—Cisco IOS software for the Catalyst 4500 series switch, basic Layer 3 and voice software image (RIPv1, RIPv2, Static Routes, AppleTalk, and IPX), Release Software Routing, Release 12.1(19)EW (cat4000-i9s-mz.121-19.EW)
- S4KL3E-12119EW—Cisco IOS software for the Catalyst 4500 series switch, Supervisor Engines III and IV, enhanced Layer 3 and voice software image including OSPF, IS-IS, IGRP, and EIGRP, Release 12.1(19)EW (cat4000-i5s-mz.121-19.EW)
- S4KL3K2-12119EW—Cisco IOS software for the Catalyst 4500 series switch with 3DES strong encryption, basic Layer 3 and voice software image (SSHv1, SSHv2, RIPv1, RIPv2, static routes, AppleTalk, and IPX), Release 12.1(19)EW (cat4000-i9k2s-mz.121-19.EW)
- S4KL3EK2-12119EW—Cisco IOS software for the Catalyst 4500 series switch, Supervisor Engines III and IV with 3DES strong encryption, enhanced Layer 3 and voice software image including (OSPF, IS-IS, IGRP, and EIGRP), Release 12.1(19)EW (cat4000-i5k2s-mz.121-19.EW)
- S4KL3-12113EW—Cisco IOS software for the Catalyst 4500 series switch, Supervisor Engines III and IV, basic Layer 3 and voice software image (RIP, Static Routes, AppleTalk and IPX), Release 12.1(13)EW
- S4KL3E-12113EW—Cisco IOS software for the Catalyst 4500 series switch, Supervisor Engines III and IV, enhanced Layer 3 and voice software image including OSPF, IGRP, EIGRP, and IS-IS, Release 12.1(13)EW
- S4KL3K2-12113EW—Cisco IOS software for the Catalyst 4500 series switch, Supervisor Engines III and IV with 3DES strong encryption, basic Layer 3 and voice software image (SSHv1, RIP, static routes, AppleTalk and IPX), Release 12.1(13)EW
- S4KL3EK2-12113EW—Cisco IOS software for the Catalyst 4500 series switch, Supervisor Engines III and IV with 3DES strong encryption, enhanced Layer 3 and voice software image including OSPF, IGRP, EIGRP, and IS-IS, Release 12.1(13)EW
- S4KL3-12112EW—Cisco IOS software for the Catalyst 4500 series switch, Supervisor Engines III and IV, basic Layer 3 software image (RIP, Static Routes, AppleTalk and IPX), Release 12.1(12c)EW
- S4KL3E-12112EW—Cisco IOS software for the Catalyst 4500 series switch, Supervisor Engines III and IV, enhanced Layer 3 software image including OSPF, IGRP and EIGRP, Release 12.1(12c)EW
- S4KL3-12111EW—Cisco IOS software for the Catalyst 4500 series switch, basic Layer 3 software image (RIP, static routes), Release 12.1(11b)EW

- S4KL3E-12111EW—Cisco IOS software for the Catalyst 4500 series switch, enhanced Layer 3 software image including OSPF, IGRP and EIGRP, Release 12.1(11b)EW1
- S4KL3-12108EW—Cisco IOS software for the Catalyst 4500 series switch, basic Layer 3 software image (RIP, static routes), Release 12.1(8a)EW
- S4KL3E-12108EW—Cisco IOS software for the Catalyst 4500 series switch, enhanced Layer 3 software image including OSPF, IGRP and EIGRP, Release 12.1(8a)EW1

Catalyst 4500 Series Switch Cisco IOS Release Strategy

Cisco IOS Release 12.2SG train offers the latest features for the Catalyst 4500 Series supervisor engines. Customers with Catalyst 4500 Series supervisor engines who need the latest hardware support and software features should migrate to Cisco IOS Release 12.2(44)SG.

Note As part of the Cisco IOS Reformation effort, Cisco IOS Releases 12.2EW and 12.2SG are the same release train with a name change.

Catalyst 4500 Series has two maintenance trains. The Cisco IOS Release 12.2(25)EW train is the most stable train but only has features found in the Cisco IOS Release 12.2(25)EW. The Cisco IOS Release 12.2(31)SG train has more recent features including support for the WS-X4013+10GE supervisor engine. Currently, the Cisco IOS Release 12.2(31)SGA5 is the recommended release for customers desiring a release with a maintenance train.

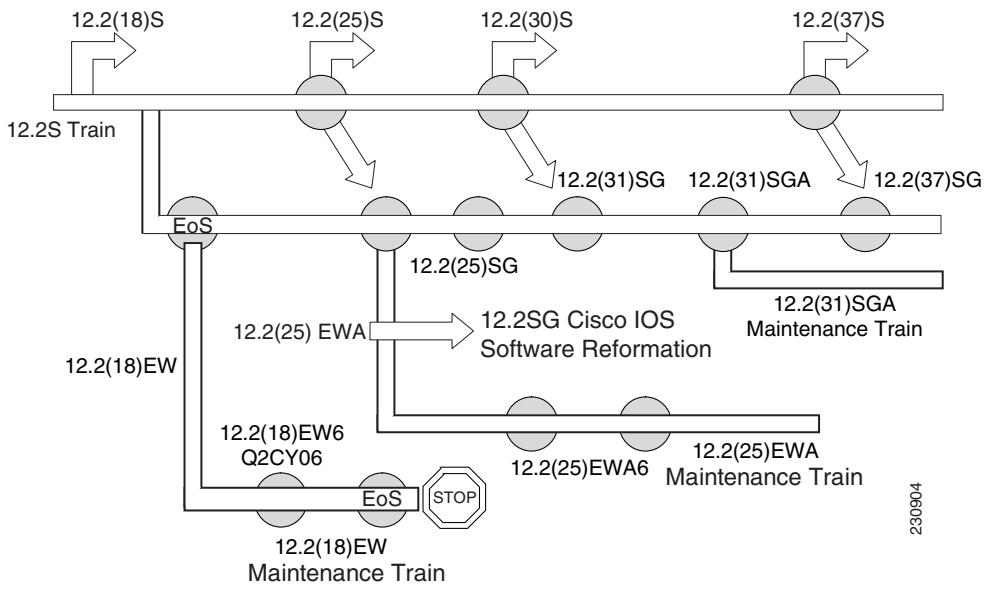
For more information on the Catalyst 4500 series switches, visit the following URL:

www.cisco.com/univercd/cc/td/doc/product/lan/cat4000/index.htm

Cisco IOS Software Migration Guide

Figure 1 displays the Cisco IOS Software Release 12.2(40)SG plan relative to the 12.2S release train and identifies the recommended migration path. Note that 12.2(40)SG will not be the base release for a new maintenance train. Currently, the Cisco Catalyst 4500 platform has two active maintenance trains: 12.2(25)EWA and 12.2(31)SGA.

Figure 1 Software Release Strategy for the Catalyst 4500 Series Switch



Summary of Migration Plan

- Customers requiring the latest Cisco Catalyst 4500 Series hardware and software features should migrate to Cisco IOS Software Release 12.2(40)SG.
- Cisco IOS Software Release 12.2(31)SGA will continue offering maintenance releases. The latest release from the 12.2(31)SGA maintenance train is 12.2(31)SGA3.
- Cisco IOS Software Release 12.2(25)EWA will continue offering maintenance releases. The latest release from the 12.2(25)EWA maintenance train is 12.2(25)EWA10.

System Requirements

This section describes the system requirements:

- Memory Requirements, page 7
- Supported Hardware on Catalyst 4500 Series Switch, page 8
- Supported Features on the Catalyst 4500 Series Switch, page 14
- Unsupported Features, page 21

Memory Requirements

These are the minimum required memory configurations for Cisco IOS software on the Catalyst 4500 series switch:

- 256-MB SDRAM DIMM
- 32-MB Flash SIMM

Supported Hardware on Catalyst 4500 Series Switch

Table 1 lists the hardware supported on the Catalyst 4500 Series Switch.

Table 1 Supported Hardware

Product Number (append with "=" for spares)	**Product Description**	**Software Release**	
		Minimum	**Recommended**
Supervisor Engines			
WS-X4013+=	Catalyst 4500 series switch Supervisor Engine II-Plus	12.1(19)EW	12.2(31)SGA4
WS-X4013+TS	Catalyst 4500 series switch Supervisor Engine II-Plus-TS	12.2(20)EWA	12.2(31)SGA4
WS-X4013+10GE	Catalyst 4500 series switch Supervisor Engine II-Plus-10GE	12.2(25)SG	12.2(31)SGA1
WS-X4515=	Catalyst 4500 series switch Supervisor Engine IV	12.1(12c)EW	12.2(31)SGA4
WS-X4515/2=	Catalyst 4507R series switch Redundant Supervisor Engine IV	12.1(12c)EW	12.2(31)SGA4
WS-X4516=	Catalyst 4500 series switch Supervisor Engine V	12.2(18)EW	12.2(31)SGA4
WS-X4516/2=	Catalyst 4507R series switch Redundant Supervisor Engine V	12.2(18)EW	12.2(31)SGA4
WS-X4516-10GE=	Catalyst 4500 series switch Supervisor Engine V-10GE	12.2(25)EW	12.2(31)SGA4
WS-X45-Sup6-E	Catalyst 4500 E-series switch Supervisor Engine 6-E	12.2(40)SG	12.2(40)SG
Gigabit Ethernet Switching Modules			
WS-X4302-GB	2-port 1000BASE-X (GBIC) Gigabit Ethernet module	12.1(19)EW	12.2(31)SGA4
WS-X4306-GB	6-port 1000BASE-X (GBIC) Gigabit Ethernet switching module	12.1(8a)EW	12.2(31)SGA4
WS-X4418-GB	18-port 1000BASE-X (GBIC) Gigabit Ethernet server switching module	12.1(8a)EW	12.2(31)SGA4
WS-X4412-2GB-T	12-port 1000BASE-T Gigabit Ethernet and 2-GBIC ports switching module	12.1(8a)EW	12.2(31)SGA4
WS-X4424-GB-RJ45	24-port 10/100/1000BASE-T Gigabit Ethernet RJ-45 switching module	12.1(8a)EW	12.2(31)SGA4
WS-X4448-GB-LX	48-port 1000BASE-LX (small form-factor pluggable) Gigabit Ethernet fiber optic interface switching module	12.1(8a)EW	12.2(31)SGA4
WS-X4448-GB-RJ45	48-port 10/100/1000BASE-T Gigabit Ethernet switching module	12.1(8a)EW	12.2(31)SGA4
WS-X4448-GB-SFP	48-port 1000BASE-X (small form-factor pluggable) module	12.2(20)EW	12.2(31)SGA4
WS-X4506-GB-T	6-port Alternately-Wired 10/100/1000BASE-T Catalyst 4500 series Power over Ethernet (PoE) 802.3af or 1000BASE-X SFP	12.2(20)EWA	12.2(31)SGA4
WS-X4524-GB-RJ45V	24-port 10/100/1000BASE-T RJ-45 Catalyst 4500 series PoE 802.3af	12.2(18)EW	12.2(31)SGA4
WS-X4548-GB-RJ45	48-port 10/100/1000BASE-T Gigabit Ethernet module	12.1(19)EW	12.2(31)SGA4
WS-X4548-GB-RJ45V	48-port 10/100/1000BASE-T RJ-45 Catalyst 4500 series PoE 802.3af	12.2(18)EW	12.2(31)SGA4
Fast Ethernet Switching Modules			
WS-X4124-FX-MT	24-port 100BASE-FX Fast Ethernet MT-RJ multimode fiber switching module	12.1(8a)EW	12.2(31)SGA4

Table 1 Supported Hardware (continued)

Product Number (append with "=" for spares)	**Product Description**	**Software Release**	
		Minimum	**Recommended**
WS-X4148-FX-MT	48-port 100BASE-FX Fast Ethernet MT-RJ multimode fiber switching module	12.1(8a)EW	12.2(31)SGA4
WS-X4148-FE-LX-MT	48-port 100BASE-LX10 Fast Ethernet MT-RJ single-mode fiber switching module	12.1(13)EW	12.2(31)SGA4
WS-X4148-FE-BD-LC	48-port 100BASE-BX10-D module	12.2(18)EW	12.2(31)SGA4
WS-X4248-FE-SFP	48-port 100BASE-X SFP switching module	12.2(25)SG	12.2(25)SG
WS-U4504-FX-MT	4-port 100BASE-FX (MT-RF) uplink daughter card	12.1(8a)EW	12.2(31)SGA4
Ethernet/Fast Ethernet (10/100) Switching Modules			
WS-X4124-RJ45	24-port 10/100 RJ-45 module	12.2(20)EW	12.2(31)SGA4
WS-X4148-RJ	48-port 10/100 RJ-45 switching module	12.1(8a)EW	12.2(31)SGA4
WS-X4148-RJ21	48-port 10/100 4xRJ-21 (telco connector) switching module	12.1(8a)EW	12.2(31)SGA4
WS-X4148-RJ45V	48-port Pre-standard PoE 10/100BASE-T switching module	12.1(8a)EW for data support 12.1(11b)EW for data and inline power support	12.2(31)SGA4
WS-X4224-RJ45V	24-port 10/100BASE-TX RJ-45 Cisco Catalyst 4500 series PoE 802.3af	12.2(20)EW	12.2(31)SGA4
WS-X4232-GB-RJ	32-port 10/100 Fast Ethernet RJ-45, plus 2-port 1000BASE-X (GBIC) Gigabit Ethernet switching module	12.1(8a)EW	12.2(31)SGA4
WS-X4248-RJ45V	48-port 10/100BASE-T RJ-45 Cisco Catalyst 4500 series PoE 802.3af	12.2(18)EW	12.2(31)SGA4
WS-X4248-RJ21V	48-port 10/100 Fast Ethernet RJ-21 Cisco Catalyst 4500 series PoE 802.3af telco	12.2(18)EW	12.2(31)SGA4
WS-X4232-RJ-XX	32-port 10/100 Fast Ethernet RJ-45 modular uplink switching module	12.1(8a)EW	12.2(25)EWA8
Small Form-Factor Pluggable 100 Megabit Ethernet Modules			
GLC-FE-100FX	100BASE-FX, 1310 nm wavelength, 2 km over MMF	12.2(25)SG	12.2(31)SGA4
GLC-FE-100LX	100BASE-LX, 1310 nm wavelength, 10 km over SMF	12.2(25)SG	12.2(31)SGA4
GLC-FE-100BX-D	100BASE-BX10-D, 1550 nm TX/1310 nm RX wavelength	12.2(25)SG	12.2(31)SGA4
GLC-FE-100BX-U	100BASE-BX10-U, 1310 nm TX/1550 nm RX wavelength	12.2(25)SG	12.2(31)SGA4
Small Form-Factor Pluggable Gigabit Ethernet Modules			
GLC-BX-D	1000BASE-BX10-D small form-factor pluggable module For DOM support, see Table 5 on page 13.	12.2(20)EWA	12.2(31)SGA4
GLC-BX-U	1000BASE-BX10-U small form-factor pluggable module For DOM support, see Table 5 on page 13.bv	12.2(20)EWA	12.2(31)SGA4
GLC-SX-MM	1000BASE-SX small form-factor pluggable module	12.2(20)EW	12.2(31)SGA4

Table 1 Supported Hardware (continued)

Product Number (append with "=" for spares)	**Product Description**	**Software Release**	
		Minimum	**Recommended**
GLC-LH-SM	1000BASE-LX/LH small form-factor pluggable module	12.2(20)EW	12.2(31)SGA4
GLC-ZX-SM	1000BASE-ZX small form-factor pluggable module	12.2(20)EW	12.2(31)SGA4
GLC-T	1000BASE-T small form-factor pluggable module	12.2(20)EW	12.2(31)SGA4
CWDM-SFP-xxxx	CWDM small form-factor pluggable module (See Table 2 on page 11 for a list of supported wavelengths.) For DOM support, see Table 5 on page 13.	12.2(20)EW	12.2(31)SGA4
10 Gigabit Ethernet X2 Pluggable Modules			
X2-10GB-LR	10GBASE-LR X2 transceiver module for SMF, 1310-nm wavelength, SC duplex connector	12.2(25)EW	12.2(31)SGA4
X2-10GB-ER	10GBASE-ER X2 transceiver module for SMF, 1550-nm wavelength, SC duplex connector	12.2(25)EWA	12.2(31)SGA4
X2-10GB-CX4	10GBASE-CX4 X2 transceiver module for CX4 cable, copper, Infiniband 4X connector	12.2(25)EWA	12.2(31)SGA4
X2-10GB-LX4	10GBASE-LX4 X2 transceiver module for MMF, 1310-nm wavelength, SC duplex connector	12.2(25)EWA	12.2(31)SGA4
X2-10GB-LRM	10GBASE-LRM X2 transceiver module for MMF, 1310-nm wavelength, SC duplex connector	12.2(31)SGA	12.2(31)SGA
X2-10GB-SR	10GBASE-SR X2 transceiver module for MMF, 850-nm wavelength, SC duplex connector	12.2(25)EWA	12.2(31)SGA4
Gigabit Interface Converter			
WS-G5483=	1000BASE-T GBIC	12.1(13)EW	12.2(31)SGA4
WS-G5484	1000BASE-SX short wavelength GBIC (multimode only)	12.1(8a)EW	12.2(31)SGA4
WS-G5486	1000BASE-LX/LH long-haul GBIC (single mode or multimode)	12.1(8a)EW	12.2(31)SGA4 31)SGA4
WS-G5487	1000BASE-ZX extended reach GBIC (single-handed)	12.1(8a)EW	12.2(31)SGA4
CWDM-GBIC-xxxx	CWDM gigabit interface converter (See Table 2 on page 11 for a list of supported wavelengths.)	12.1(12c)EW	12.2(31)SGA4
DWDM-GBIC-xx.yy	Dense Wavelength-Division Multiplexing ITU 100-Ghz grid 15xx.yy nm GBIC. For DOM support, see Table 5 on page 13.	12.1(19)EW	12.2(31)SGA4
WDM-GBIC-REC	Receive-only 1000BASE-WDM GBIC	12.1(19)EW	12.2(31)SGA4
Other Modules			
MEM-C4K-FLD64M	Catalyst 4500 series switch CompactFlash, 64 MB Option	12.1(8a)EW	12.2(31)SGA4
MEM-C4K-FLD128M	Catalyst 4500 series switch CompactFlash, 128 MB Option	12.1(8a)EW	12.2(31)SGA4
WS-F4531	Catalyst 4500 series switch NetFlow Services Card on Catalyst 4500 series switch Supervisor Engines IV and V	12.1(13)EW	12.2(31)SGA4
WS-X4590=	Catalyst 4500 series switch Fabric Redundancy Modules	12.2(18)EW	12.2(31)SGA4
PWR-C45-1000AC	Catalyst 4500 series switch 1000 Watt AC power supply for chassis 4503, 4506, and 4507R (data only)	12.1(12c)EW	12.2(31)SGA4

Table 1 Supported Hardware (continued)

Product Number (append with "=" for spares)	**Product Description**	**Software Release**	
		Minimum	**Recommended**
PWR-C45-1400DC	Catalyst 4500 series switch 1400 Watt DC triple input power supply (data-only)	12.2(25)EW	12.2(31)SGA4
PWR-C45-1400DC-P	Catalyst 4500 series switch 1400 Watt DC power supply with integrated PEM	12.1(19)EW	12.2(31)SGA4
PWR-C45-1400AC	Catalyst 4500 series switch 1400 Watt AC power supply (data-only)	12.1(12c)EW	12.2(31)SGA4
PWR-C45-1300ACV	Catalyst 4500 series switch 1300 Watt AC power supply with integrated voice for chassis 4503, 4506, and 4507R	12.1(12c)EW	12.2(31)SGA4
PWR-C45-2800ACV	Catalyst 4500 series switch 2800 Watt AC power supply with integrated voice (data and PoE) for chassis 4503, 4506, and 4507R	12.1(12c)EW	12.2(31)SGA4
PWR-C45-4200ACV	Catalyst 4500 series switch 4200 Watt AC dual input power supply with integrated voice (data and PoE)	12.2(25)EWA5	12.2(31)SGA4
WS-P4502-1PSU	Catalyst 4500 series switch auxiliary power shelf (25-slot), including one PWR-4502	12.1(19)EW	12.2(31)SGA4
PWR-4502	Catalyst 4500 series switch auxiliary power shelf redundant power supply	12.1(19)EW	12.2(31)SGA4

Table 2 briefly describes the supported wavelengths in the Catalyst 4500 Classic Series Switch.

Table 2 CWDM GBIC and SFP Supported Wavelengths for the Catalyst 4500 Classic Series Switch

Product Number (append with "=" for spares)	**Product Description**	**Software Release**	
		Minimum	**Recommended**
CWDM-GBIC (or SFP) -1470	Longwave 1470 nm laser single-mode	12.1(12c)EW	12.2(31)SGA4
CWDM-GBIC (or SFP) -1490	Longwave 1490 nm laser single-mode	12.1(12c)EW	12.2(31)SGA4
CWDM-GBIC (or SFP) -1510	Longwave 1510 nm laser single-mode	12.1(12c)EW	12.2(31)SGA4
CWDM-GBIC (or SFP) -1530	Longwave 1530 nm laser single-mode	12.1(12c)EW	12.2(31)SGA4
CWDM-GBIC (or SFP) -1550	Longwave 1550 nm laser single-mode	12.1(12c)EW	12.2(31)SGA4
CWDM-GBIC (or SFP) -1570	Longwave 1570 nm laser single-mode	12.1(12c)EW	12.2(31)SGA4
CWDM-GBIC (or SFP) -1590	Longwave 1590 nm laser single-mode	12.1(12c)EW	12.2(31)SGA4
CWDM-GBIC (or SFP) -1610	Longwave 1610 nm laser single-mode	12.1(12c)EW	12.2(31)SGA4

Table 3 briefly describes the seven chassis in the Catalyst 4500 Series Switch. For the chassis listed in the table, refer to Table 4 on page 13 for software release information.

Table 3 Chassis Description for the Catalyst 4500 Series Switch

Product Number (append with "=" for spares)	**Description of Modular Chassis**
WS-C4503	Catalyst 4503 chassis includes these components: • 3 slots • Fan tray • Supports Supervisor Engine V-10GE, Supervisor Engine V, Supervisor Engine IV, Supervisor Engine III, Supervisor Engine II-Plus-10GE, Supervisor Engine II-Plus-TS, Supervisor Engine II-Plus, and Supervisor Engine II
WS-C4506	Catalyst 4506 chassis includes these components: • 6 slots • Fan tray • Supports Supervisor Engine V-10GE, Supervisor Engine V, Supervisor Engine IV, Supervisor Engine III, Supervisor Engine II-Plus-10GE, Supervisor Engine II-Plus, and Supervisor Engine II
WS-C4507R	Catalyst 4507R chassis includes these components: • 7 slots • Fan tray • Supports Supervisor Engine V-10GE, Supervisor Engine V, Supervisor Engine IV, Supervisor Engine II-Plus-10GE, and Supervisor Engine II-Plus
WS-C4510R	Catalyst 4510R chassis includes these components: • 10 slots; slot 10 accepts only the Catalyst 4500 series 2-port Gigabit Ethernet line card (WS-X4302-GB with Supervisor Engine V **Note** The Supervisor Engine V-10GE does not have this restriction. • Fan tray • Supports Supervisor Engine V-10GE and Supervisor Engine V

Table 4 lists the software release information for the Catalyst 4500 Series Switch supervisor engines.

Table 4 Supervisor Engine Support on the Catalyst 4500 Series Switch

Supervisor Engine	Software Release	
	Minimum	Recommended
Supervisor Engine II	Catalyst operating system software	
Supervisor Engine II-Plus	12.1(19)EW	12.2(31)SGA4
Supervisor Engine II-Plus-TS	12.2(20)EWA	12.2(31)SGA4
Supervisor Engine II-Plus-10GE	12.2(25)SG	12.2(25)SG4
Supervisor Engine IV	12.1(12c)EW	12.2(31)SGA4
Supervisor Engine V	12.2(18)EW	12.2(31)SGA4
Supervisor Engine V-10GE	12.2(25)EW	12.2(31)SGA4

Table 5 DOM Support on the Catalyst 4500 Series Switch

Transceiver Module	Support in Software Since...
GLC-BX-D	12.2(20)EWA
GLC-BX-U	12.2(20)EWA
DWDM GBIC	12.1(19)EW
CWDM SFP	12.2(20)EWA

Supported Hardware on Catalyst 4500 E-Series Switch

In addition to the classic line cards and supervisor engines, Cisco IOS Software Release 12.2(40)SG supports the next-generation high-performance E-Series Supervisor Engine 6-E with CenterFlex technology and E-Series line cards and chassis. A brief list of primary E-Series hardware supported by Cisco IOS Software Release 12.2.(40)SG40)SG is shown in Table 6

For the chassis listed in the table, refer to Table 6 on page 13 for software release information.

Table 6 Supported E-Series Hardware

Product Number	Description
WS-C4503-E	Cisco Catalyst 4500 E-Series 3-Slot Chassis • Fan tray • No Power Supply
WS-C4506-E	Cisco Catalyst 4500 E-Series 6-Slot Chassis • Fan tray • No Power Supply
WS-C4507R-E	Cisco Catalyst 4500 E-Series 7-Slot Chassis • Fan tray • No Power Supply • Redudant supervisor engine capability

Table 6 Supported E-Series Hardware

Product Number	Description
WS-C4510R-E	Cisco Catalyst 4500 E-Series 10-Slot Chassis • Fan tray • No Power Supply • Redudant supervisor engine capability
WS-X45-Sup6-E	Cisco Catalyst 4500 E-Series Sup 6-E, 2x10GE(X2) w/ TwinGig
WS-X4648-RJ45V-E	• Cisco Catalyst 4500 E-Series 48-Port PoE 802.3af 10/100/1000(RJ45)
WS-X4648-RJ45V+E	• Cisco Catalyst 4500 E-Series 48-Port Premium PoE 10/100/1000
WS-X4606-X2-E	Cisco Catalyst 4500 E-Series 6-Port 10GbE (X2)

Supported Features on the Catalyst 4500 Series Switch

Table 7 lists the Cisco IOS software features for the Catalyst 4500 Series Switch.

Table 7 Cisco IOS Software Feature Set for the Catalyst 4500 Series and E-Series Switch

Layer 2 Switching Features
Storm Control
Storm Control: Per-Port Multicast Suppression (Sup 6-E only)
Multicast Storm Control[1]
IP Source Guard
IP Source Guard for Statis Hosts
PVRST+
Layer 2 protocol tunneling
Layer 2 transparent bridging[2]
Layer 2 MAC[3] learning, aging, and switching by software
Unicast MAC address filtering
VMPS[4] Client
Layer 2 hardware forwarding up to 102 Mpps
Layer 2 Control Policing (Not supported on Sup 6-E)
Layer 2 switch ports and VLAN trunks
Spanning-Tree Protocol (IEEE 802.1D) per VLAN
802.1s and 802.1w
Layer 2 traceroute
Unidirectional Ethernet port
Per-VLAN spanning tree (PVST) and PVST+
Spanning-tree root guard

Table 7 Cisco IOS Software Feature Set for the Catalyst 4500 Series and E-Series Switch

Spanning-tree Loop guard and PortFast BPDU Filtering
Support for 9216 byte frames
Port security on PVLANs
Private VLANs
Private VLAN DHCP snooping
Private VLAN Promiscuous Trunk
Community PVLANs
ISL[5]-based VLAN encapsulation (excluding blocking ports on WS-X4418-GB and WS-X4412-2GB-T)[6]
IEEE 802.1Q-based VLAN encapsulation
Multiple VLAN access port
VLAN Trunking Protocol (VTP) and VTP domains
Support for 4096 VLANs per switch
Unidirectional link detection (UDLD) and aggressive UDLD
SNMP V3 support for Bridge-MIB with VLAN indexing
Layer 3 Routing, Switching, and Forwarding
802.1Q Tunneling (Q in Q)[7]
Pragmatic General Multicast
Auto RP Listener
IP and IP multicast routing and switching between Ethernet ports
Static IP routing
Classless routing[8]
PBR[9]
Dynamic Buffer Limiting
Selective Dynamic Buffer Limiting
QoS-based forwarding based on IP precedence
Trusted boundary
Cisco Modular QoS Command-Line Interface (Sup 6-E only)
Auto QoS
Match CoS for non-IPV4 traffic
IPv6 Forwarding in Hardware (Sup 6-E only)
CoS Mutation
CEF[10] load balancing
uRPF[11] (Sup 6-E only)
Hardware-based IP CEF routing at 48 Mpps
Up to 128,000 IP routes
Up to 32,000 IP host entries (Layer 3 adjacencies)
Up to 16,000 IP multicast route entries

Table 7 Cisco IOS Software Feature Set for the Catalyst 4500 Series and E-Series Switch

Multicast flooding suppression for STP changes
Software routing of IPX, AppleTalk, and IPv6.
IGMPv1, IGMPv2, and IGMPv3 (Full Support)
VRF-lite
Route Leaking[12]
IP Unnumbered
SVI Autostate Exclude
Supported Protocols
IS-IS[13]
DTP[14]
RIP[15] and RIP II
EIGRP[16]
EIGRP IPv6 (Sup 6-E only)
OSPF[17]
BGP4[18]
BGP route-map Continue
BGP Neighbor Policy
MBGP[19]
MSDP[20]
ICMP[21] Router Discovery Protocol
PIM[22]—sparse and dense mode
Static routes
Classless interdomain routing (CIDR)
DVMRP[23]
SSM
NTP[24]
WCCP version 2 Layer 2 Redirection
VRRP[25]
SCP[26]
GLBP[27]
EtherChannel Features
Cisco EtherChannel technology - 10/100/1000 Mbps, 10 Gbps
Load balancing for routed traffic, based on source and destination IP addresses
Load sharing for bridged traffic based on MAC addresses
ISL on all EtherChannels
IEEE 802.1Q on all EtherChannels
Bundling of up to eight Ethernet ports

Table 7 Cisco IOS Software Feature Set for the Catalyst 4500 Series and E-Series Switch

Up to 64 active Ethernet port channels
Trunk Port Security over EtherChannel
Additional Protocols and Features
SPAN CPU port mirroring
SPAN packet-type filtering
SPAN destination in-packets option
SPAN ACL filtering
RSPAN
Enhanced VLAN statistics
Netflow version 8
NetFlow Statistics Collection
NetFlow Statistics Export Version 1 and Version 5
NetFlow Bridged IP Flow
Secondary addressing
Bootstrap protocol (BOOTP)
Authentication, authorization, and accounting using TACACS+ and RADIUS protocol
Cisco Discovery Protocol (CDP)
Selecting Mode of Capturing Control Packets (Not supported on Sup 6-E)
Sticky port security
Trunk port security
Voice VLAN Sticky port security
Cisco Group Management Protocol (CGMP) server support
HSRP[28] over Ethernet, EtherChannels - 10/100/1000Mbps, 10 Gbps
IGMP snooping version1, version 2, and version 3 (Full Support)
IGMP filtering
Port Aggregation Protocol (PagP)
802.3ad LACP
SSH version 1 and version 2[29]
Inline power preallocation
show interface capabilities command
IfIndex persistence
UDLR[30]
Enhanced SNMP MIB support
SNMP[31] version 1, version 2, and version 3
SNMP version 3 (with encryption)
IPv6 Multicast Listener Discovery Snooping (Sup 6-E only)
Option 82 Enhancement

Table 7 Cisco IOS Software Feature Set for the Catalyst 4500 Series and E-Series Switch

DHCP server and relay-agent
DHCP snooping
DHCP client autoconfiguration
DHCP Option 82 Pass Through
802.1X port-based authentication
802.1X with port security
802.1X accounting
802.1X with voice VLAN ID
802.1X private VLAN assignment
802.1X private guest VLAN
802.1X RADIUS-supplied session timeout
802.1X authentication failure VLAN
802.1X MAC Authentication Bypass
802.1X Inaccessible Authentication Bypass
802.1X Unidirectional Controlled Port
802.1X Multi Domain Authentication
Cisco NAC[32] Layer 2 802.1X
Port flood blocking
Router standard and extended ACLs [33]on all ports with no performance penalty
Extended IPX Access Control Lists
VLAN Access Control Lists
PACL[34]
Control Plane Policing
Two-Rate Three-Color Policing (Sup 6-E only)
Local Proxy ARP
Dynamic ARP Inspection on PVLANs
Dynamic ARP Inspection
Dynamic Multi-Protocol Ternary Content Addressable Memory (Sup 6-E only)
Per-port QoS[35] rate-limiting and shaping
Per-port Per-VLAN QoS
Inline power support for Cisco IP phones
PoE[36]
Power redundancy
RPR[37]
SSO[38]
SSO Aware HSRP
SSO support for routed ports

Table 7 Cisco IOS Software Feature Set for the Catalyst 4500 Series and E-Series Switch

Non-stop Forwarding Awareness
Non-stop Forwarding Awareness for EIGRP-stub in IP base for all supervisor engines
Non-stop Forwarding with Stateful Switchover
ISSU[39]
MAC Address Notification
Combined Mode Power Resiliency
SmartPort macros
Forced 10/100 Auto Negotiation
802.1s standards compliance
IS-IS MIB
OSPF Fast Convergence[40]
Time Domain Reflectometry
CNA[41]
CLI to turn off Auto MDIX[42]
Logging redirection
Service-Aware Resource Allocation (Sup 6-E only)
TwinGig Converter Module (Sup 6-E only)
FAT File System (Sup 6-E only)

1. Requires the Catalyst 4500 series switch Supervisor Engine V
2. Hardware-based transparent bridging within a VLAN
3. MAC = Media Access Control
4. VMPS = VLAN Management Policy Server
5. ISL = Inter-Switch Link
6. Ports 3 thru 18 on the WS-X4418-GB and ports 1 thru 12 on the WS-X4412-2GB
7. Requires the Catalyst 4500 series switch Supervisor Engine V
8. The **ip classless** command is not supported as classless routing is enabled by default.
9. PBR = policy-based routing
10. CEF = Cisco Express Forwarding
11. uRPF = Unicast Reverse Path Forwarding
12. Route Leaking from a global routing table into a VRF and Route Leaking from a VRF into a global routing table
13. IS-IS = Intermediate System to Intermediate System
14. DTP = Dynamic Trunking Protocol
15. RIP = Routing Information Protocol
16. EIGRP = Enhanced Interior Gateway Routing Protocol
17. OSPF = Open Shortest Path First
18. BGP4 = Border Gateway Protocol 4
19. MBGP = Multicast Border Gateway Protocol
20. MSDP = Multicast Source Discovery Protocol
21. ICMP = Internet Control Message Protocol
22. PIM = Protocol Independent Multicast
23. DVMRP = Distance Vector Multicast Routing Protocol
24. NTP = Network Time Protocol
25. VRRP = Virtual Router Redundancy Protocol

26. SCP = Secure Copy Protocol
27. GLBP = Gateway Load Balancing Protocol
28. HSRP = Hot Standby Router Protocol
29. SSH = Secure Shell Protocol
30. UDLR = Unidirectional Link Routing
31. SNMP = Simple Network Management Protocol
32. NAC = Network Admission Control
33. ACLs = Access Control Lists
34. PACL = Port Access Control List
35. QoS = Quality of Service
36. PoE = Power over Ethernet
37. RPR = Supervisor engine redundancy
38. SSO = Stateful switchover (includes Stateful IGMP Snooping and Stateful DHCP Snooping)
39. ISSU = In Service Software Upgrade Process
40. The Catalyst 4500 series switch supports Fast Hellos, ISPF, and LSA Throttling.
41. CNA = Cisco Network Assistant; Minimum CNA release that supports Releases 12.2(25)EW is 1.0(2). Minimum CNA release that supports Release 12.2(20)EWA is 1.0(1).
42. On supported linecards: WS-X4124-RJ45, WS-X4148-RJ (and WS-X4232-GB-RJ) with hardware revision 3.0 or higher

Features Unique to the Supervisor Engine 6-E

With Cisco IOS Release 12.2(40)SG, the following features are available only with Supervisor Engine 6E:

- IPv6
  - IPv6 Addressing Architecture
  - CDP IPv6 Address Family
  - CEFv6
  - DNS resolver for AAAA over an IPv4 transport
  - DNS resolver for AAAA over an IPv6 transport
  - Extended ACL
  - Hop-by-Hop option header
  - ICMP Rate Limiting
  - ICMPv6
  - ICMPv6 Redirect
  - IPv6 MIB
  - IPv6 over IEEE 802.1Q
  - IPv6 over IPv4 GRE tunnel
  - ISATAP
  - Loopback
  - MFIB for IPv6
  - MLD Snooping (will show up as a new chapter in the Config Guide)
  - MLDv1/v2
  - MTU Path Discovery for IPv6

  - OSPFv3
  - RIPng
  - EIGRPv6
- FAT filesystem
- PIM (SM, DM, SDM)
- QoS
  - Two Rate three Color Policing
  - Table map support for classification
- Voltage Margining CLI
- QoS for IPv6

Unsupported Features

For all Supervisor Engines (II-Plus thru 6-E), the following features are not supported in Cisco IOS Release 12.2(40)SG for the Catalyst 4500 series switches:

- The following ACL types:
  - Standard Xerox Network System (XNS) access list
  - Extended XNS access list
  - DECnet access list
  - Protocol type-code access list
- ADSL and Dial access for IPv6
- AppleTalk EIGRP (use native AppleTalk routing instead)
- Bridge groups
- Cisco IOS software IPX ACLs:
  - <1200-1299> IPX summary address access list
- Cisco IOS software-based transparent bridging (also called “fallback bridging”)
- Connectionless (CLNS) routing; including IS-IS routing for CLNS. IS-IS is supported for IP routing only.
- DLSw (data-link switching)
- IGRP (use EIGRP instead)
- IP SLA
- **isis network point-to-point** command
- Kerberos support for access control
- Lock and key
- NAT-PT for IPv6
- NetFlow per-VRF
- PBR with Multiple Tracking Options
- QoS for IPv6 (QoS for IPv6 traffic)

- Reflexive ACLs
- Routing IPv6 over an MPLS network
- Two-way community VLANs in private VLANs
- WCCP version 1

New and Changed Information

These sections describe the new and changed information for the Catalyst 4500 series switch running Cisco IOS software:

- New Hardware Features in Release 12.2(40)SG, page 23
- New Software Features in Release 12.2(40)SG, page 23
- New Hardware Features in Release 12.2(37)SG, page 24
- New Software Features in Release 12.2(37)SG, page 24
- New Hardware Features in Release 12.2(31)SG, page 25
- New Software Features in Release 12.2(31)SG, page 25
- New Hardware Features in Release 12.2(25)SG, page 26
- New Software Features in Release 12.2(25)SG, page 26
- New Hardware Features in Release 12.2(25)EWA, page 27
- New Software Features in Release 12.2(25)EWA, page 28
- New Hardware Features in Release 12.2(25)EW, page 29
- New Software Features in Release 12.2(25)EW, page 29
- New Hardware Features in Release 12.2(20)EWA, page 29
- New Software Features in Release 12.2(20)EWA, page 30
- New Hardware Features in Release 12.2(20)EW, page 30
- New Software Features in Release 12.2(20)EW, page 30
- New Hardware Features in Release 12.2(18)EW, page 31
- New Software Features in Release 12.2(18)EW, page 31
- New Hardware Features in Release 12.1(20)EW, page 31
- New Software Features in Release 12.1(20)EW, page 32
- New Hardware Features in Release 12.1(19)EW, page 32
- New Software Features in Release 12.1(19)EW, page 33
- New Hardware Features in Release 12.1(13)EW, page 34
- New Software Features in Release 12.1(13)EW, page 34
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- New Software Features in Release 12.1(12c)EW, page 35
- New Hardware Features in Release 12.1(11b)EW, page 36
- New Software Features in Release 12.1(11b)EW, page 36
- New Hardware Features in Release 12.1(8a)EW, page 37

- New Software Features in Release 12.1(8a)EW, page 37

New Hardware Features in Release 12.2(40)SG

Note In addition to the classic line cards and supervisor engines, Cisco IOS Software Release 12.2(40)SG supports the next-generation high-performance E-Series Supervisor Engine 6-E with CenterFlex technology and E-Series line cards and chassis.

A brief list of primary E-Series hardware supported by Cisco IOS Release 12.2(40)SG includes the following:

- WS-C4503-E - Cisco Catalyst 4500 E-Series 3-Slot Chassis, fan, no power supply
- WS-C4506-E - Cisco Catalyst 4500 E-Series 6-Slot Chassis, fan, no power supply
- WS-C4507R-E - Cisco Catalyst 4500 E-Series 7-Slot Chassis, fan, no power supply, redundant supervisor capability
- WS-C4510R-E - Cisco Catalyst 4500 E-Series 10-Slot Chassis, fan, no power supply, redundant supervisor capability
- WS-X45-Sup6-E - Cisco Catalyst 4500 E-Series Sup 6-E, 2x10GE(X2) w/ TwinGig
- WS-X4648-RJ45V-E - Cisco Catalyst 4500 E-Series 48-Port PoE 802.3af 10/100/1000(RJ45)
- WS-X4648-RJ45V+E - Cisco Catalyst 4500 E-Series 48-Port Premium PoE 10/100/1000
- WS-X4606-X2-E - Cisco Catalyst 4500 E-Series 6-Port 10GbE (X2)

New Software Features in Release 12.2(40)SG

Release 12.2(40)SG provides the following Cisco IOS software features for the Catalyst 4500 series switch:

Note The following chapter references are for the *Catalyst 4500 Series Switch Cisco IOS Software Configuration Guide*.

Only available on Supervisor Engine 6-E

- Dynamic Multi-Protocol Ternary Content Addressable Memory (Configuring Network Security with ACLs" chapter)
- Service-Aware Resource Allocation (Refer to the Cisco IOS Release 12.4 documentation)
- Unicast Reverse Path Forwarding ("Configuring Unicast Reverse Path Forwarding" chapter)
- IPv6 Forwarding in Hardware (Refer to the Cisco IOS Release 12.4 documentation)
- Enhanced Interior Gateway Routing Protocol IPv6 Support (Refer to the Cisco IOS Release 12.4 documentation)
- IPv6 Multicast Listener Discovery Snooping ("Configuring MLD Snooping" chapter)
- TwinGig Converter Module ("Configuring Interfaces" chapter)
- Robust and Flexible File Management System (FAT File System) (Refer to the Cisco IOS Release 12.4 documentation)

- Storm Control: Per-Port Multicast Suppression (“Configuring Storm Control” chapter)
- Cisco Modular QoS Command-Line Interface (“Configuring QoS” chapter)
- Two-Rate Three-Color Policing

Only available on Supervisor Engines II-Plus thru V-10GE

- Selecting Mode of Capturing Control Packets (Configuring Network Security with ACLs” chapter)
- Layer 2 Control Policing (“Configuring QoS” chapter)

Available on all Supervisor Engines (II-Plus thru 6-E)

- Gateway Load Balancing Protocol (Refer to the Cisco IOS Release 12.4 documentation)
- Option 82 Enhancement (“Configuring DHCP Snooping, IP Source Guard, and IPSG for Statis Hosts” chapter)

New Hardware Features in Release 12.2(37)SG

Note The Catalyst 4006 chassis is no longer supported in Cisco IOS Release 12.2(37)SG.

Release 12.2(37)SG provides the following new hardware for the Catalyst 4500 series switch:

- None

New Software Features in Release 12.2(37)SG

Release 12.2(37)SG provides the following Cisco IOS software features for the Catalyst 4500 series switch:

Note The following chapter references are for the *Catalyst 4500 Series Switch Cisco IOS Software Configuration Guide*.

- Multi Domain Authentication (“Configuring 802.1X Port-Based Authentication” chapter)
- Selective Dynamic Buffer Limiting (“Configuring QoS” chapter)
- SVI Autostate Exclude (“Configuring Layer 3 Interface” chapter)
- IP Source Guard for Statis Hosts (“Configuring DHCP Snooping, IP Source Guard, and IPSG for Statis Hosts” chapter)
- BGP route-map Continue Support for Outbound Policy

  For details, locate the feature entry in the Feature Information Table located toward the end of the "Connecting to a Service Provider Using External BGP" module:

  http://www.cisco.com/univercd/cc/td/doc/product/software/ios124/124tcg/tbgp_c/t_brbext.htm
- Auto RP Listener (Refer to the Cisco IOS Release 12.4 documentation)
- Logging Redirection (“Configuring Cisco NSF with SSO Supervisor Engine Redundancy” chapter and the “Catalyst 4500 Series Switch System Error Message Guide”)

New Hardware Features in Release 12.2(31)SGA

Note Cisco IOS Release 12.2(31)SGA is the first IOS release supporting the ME-X4924-10GE.

Following hardware was supported:

- X2-10GB-LRM

New Software Features in Release 12.2(31)SGA

Release 12.2(31)SGA provides the following Cisco IOS software features for the Catalyst 4500 series switch:

Note The following chapter references are for the *Catalyst 4500 Series Switch Cisco IOS Software Configuration Guide*.

- In Service Software Upgrade ("Configuring the Cisco IOS In Service Software Upgrade" chapter)
- Trunk Port Security over EtherChannel ("Configuring Port Security and Configuring EtherChannel" chapters)
- Match CoS for Non-IPv4 Traffic ("Configuring QoS" chapter)
- CoS Mutation ("Configuring QoS" chapter)
- QinQ Tunneling and Protocol Tunneling ("Configuring 802.1Q and Layer 2 Protocol Tunneling" chapter)
- IP Unnumbered ("Configuring IP Unnunmbered Support" chapter)
- CLI to turn off Auto-MDIX CLI on supported linecards (WS-X4124-RJ45, WS-X4148-RJ (and WS-X4232-GB-RJ) with hardware revision 3.0 or higher) ("Configuring Layer 3 Interfaces" chapter)

New Hardware Features in Release 12.2(31)SG

Release 12.2(31)SG provides the following new hardware for the Catalyst 4500 series switch:

- None

New Software Features in Release 12.2(31)SG

Release 12.2(31)SG provides the following Cisco IOS software features for the Catalyst 4500 series switch:

Note The following chapter references are for the *Catalyst 4500 Series Switch Cisco IOS Software Configuration Guide*.

- Non-Stop Forwarding with Stateful Switchover (NSF/SSO) ("Configuring Cisco NSF with SSO Supervisor Engine Redundancy" chapter)

- SSO Aware HSRP (“Configuring Cisco NSF with SSO Supervisor Engine Redundancy” chapter)
- Control Plane Policing (“Configuring Control Plane Policing” chapter)
- WCCP version 2 Layer 2 Redirection (“Configuring WCCPv2 Services” chapter)
- MAC Authentication Bypass (“Configuring 802.1X Port-Based Authentication” chapter)
- 802.1X Inaccessible Authentication Bypass (“Configuring 802.1X Port-Based Authentication” chapter)
- 802.1X Unidirectional Controlled Port (“Configuring 802.1X Port-Based Authentication” chapter)
- Private VLAN Promiscuous Trunk (“Configuring Private VLANs” chapter)
- MAC Address Notification (“Administering the Switch” chapter)
- Voice VLAN Sticky Port Security (“Configuring Port Security” chapter)
- Combined Mode Power Resiliency (“Environmental Monitoring and Power Management” chapter)
- Virtual Router Redundancy Protocol (VRRP) (Refer to the Cisco IOS Release 12.3 documentation)
- Secure Copy Protocol (SCP) (Refer to the Cisco IOS Release 12.3 documentation

New Hardware Features in Release 12.2(25)SG

Release 12.2(25)SG provides the following new hardware for the Catalyst 4500 series switch:

- WS-X4013+10GE—Catalyst 4500 series switch Supervisor Engine II-Plus-10GE
- WS-X4248-FE-SFP—Catalyst 4500 series switch 48-port 100BASE-X SFP module
- GLC-FE-100FX—100Mbit SFP, 100BASE-FX, 1310 nm wavelength, 2 km over MMF
- GLC-FE-100LX—100Mbit SFP, 100BASE-FX, 1310 nm wavelength, 10 km over MMF
- GLC-FE-100BX-D—100Mbit SFP, 100BASE-BX-D, 1550 nm TX/1310 nm RX wavelength, 10km over single-strand SMF
- GLC-FE-100BX-U—100Mbit SFP, 100BASE-BX-U, 1310 nm TX/1550 nm RX wavelength, 10km over single-strand SMF

New Software Features in Release 12.2(25)SG

Note The following chapter references are for the *Catalyst 4500 Series Switch Cisco IOS Software Configuration Guide*.

Release 12.2(25)SG provides the following Cisco IOS software features for the Catalyst 4500 series switch:

- Cisco Catalyst 4500 Series Supervisor Engine V-10GE Uplink Enhancement for simultaneous use of 10-Gigabit Ethernet and the Gigabit Ethernet SFP interfaces. (The Catalyst 4510R requires optional configuration. See the “Configuring Interfaces” chapter.)

Note On a Catalyst 4510R series switch, if you enable both the 10-Gigabit Ethernet and the Gigabit Ethernet SFP uplink ports, you must re-boot the switch. On the Catalyst 4503, 4506, and 4507R series switches, this capability is automatically enabled.

- Simultaneous provisioning of X2 pluggable moduels and SFP uplinks on the Supervisor Engine II-Plus-10GE (WS-X4013+10GE).
- 802.1S Standards Compliance (Refer to the Cisco IOS Release 12.3 documentation)
- 802.1X Authentication Failure VLAN ("Understanding and Configuring 802.1X Port-Based Authentication" chapter)
- HTTPS (Refer to the Cisco IOS Release 12.3 documentation)
- Interface Link and Trunk Status Logging Event Enhancement ("Configuring Interfaces" chapter)
- IS-IS MIB (Refer to the Cisco IOS Release 12.3 documentation
- Microflow Policing Full Flow Match ("Configuring QoS" and Configuring Netflow" chapters)
- POST enhancement for Supervisor Engine V-10GE ("Diagnostics on the Catalyst 4500 Series Switch")
- OSPF Fast Convergence. Catalyst 4500 series switch will support Fast Hellos, ISPF, and LSA Throttling.

  Refer to the following URLs for the Cisco IOS Release 12.3 documentation:

  http://www.cisco.com/univercd/cc/td/doc/product/software/ios120/120newft/120limit/120s/120s24/ospfispf.htm

  http://www.cisco.com/univercd/cc/td/doc/product/software/ios120/120newft/120limit/120s/120s25/fsolsath.htm

  http://www.cisco.com/univercd/cc/td/doc/product/software/ios124/124cg/hirp_c/ch15/hfasthel.htm
- Time Domain Reflectometry ("Checking Port Status and Connectivity" chapter)
- SNMP V3 support for Bridge-MIB with VLAN indexing

New Hardware Features in Release 12.2(25)EWA

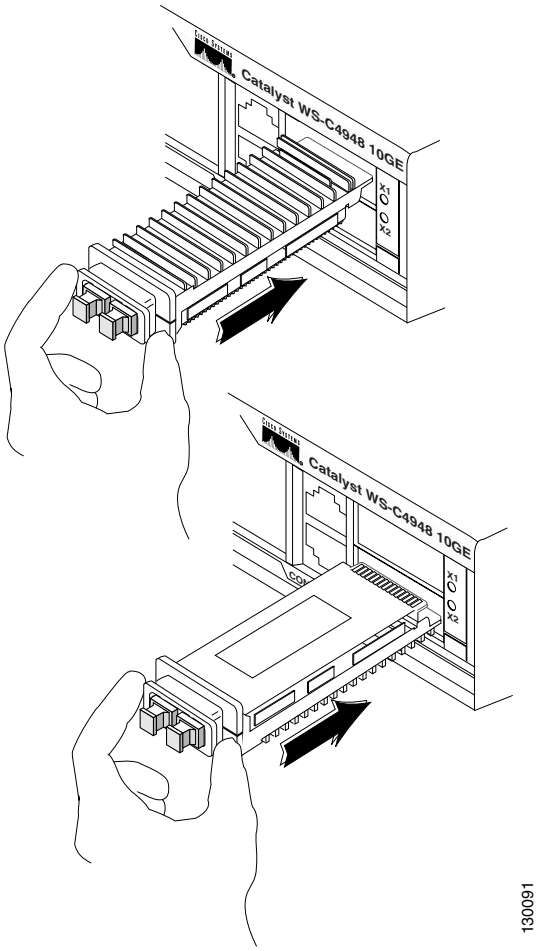
Release 12.2(25)EWA provides the following new hardware for the Catalyst 4500 series switch:

- WS-X4948-10GE—Catalyst 4948 48-Port 10/100/1000 + 2 10GE in a 1 RU with dual, redundant AC/DC power

Caution If you plan to insert X2 transceivers in the Cisco Catalyst 4948-10GE, you should ensure that the Catalyst 4500 series switch and the X2 back interfaces are properly oriented during the OIR (Online insertion and removal) of the transceivers. The top transceiver (port tengig1/49) should be inserted with heatsink facing up. The bottom transceiver (port tengig1/50) should be plugged in with heatsink facing down, CLEI (Common Language Equipment Identifiers) label facing up. (See Figure 2.). When inserted correctly, the TX/RX of the bottom transceiver would look reversed. For more details refer to the *Catalyst 4948-10GE Switch Installation Guide*, at the URL:
http://www.cisco.com/univercd/cc/td/doc/product/lan/cat4000/hw_doc/4948_10/05modcfg.htm#wp1038597

- PWR-C45-4200ACV—Catalyst 4500 series switch 4200 Watt AC dual input power supply with integrated voice (data and PoE)

Figure 2 Cavities of X2 Transceivers on the Catalyst 4948-10GE



New Software Features in Release 12.2(25)EWA

Release 12.2(25)EWA provides the following Cisco IOS software features for the Catalyst 4500 series switch:

Note The following chapter references are for the *Catalyst 4500 Series Switch Cisco IOS Software Configuration Guide*.

- Per-Port Per-VLAN QoS (“Configuring QoS and Per-Port Per-VLAN QoS” chapter)
- Trunk-Port Security (“Configuring Port Security and Trunk Port Security” chapter)
- NetFlow Bridged IP Flow (“Configuring NetFlow Statistics Collection” chapter)
- 802.1X Private VLAN Assignment (“Understanding and Configuring 802.1X Port-Based Authentication” chapter)
- 802.1X Private Guest VLAN (“Understanding and Configuring 802.1X Port-Based Authentication” chapter)

- 802.1X Radius-Supplied Session Timeout (“Understanding and Configuring 802.1X Port-Based Authentication” chapter)
- DHCP Option 82 Pass Through (“Configuring DHCP Snooping and IP Source Guard” chapter)

New Hardware Features in Release 12.2(25)EW

Note This release is deferred to 12.2(25)EWA2.

Release 12.2(25)EW provides the following new hardware for the Catalyst 4500 series switch:

- WS-X4516-10GE—Catalyst 4500 series switch Supervisor Engine V-10GE
- PWR- C45-1400DC SP—Catalyst 4500 series switch 1400 DC triple input power supply (data-only)

New Software Features in Release 12.2(25)EW

Note This release is deferred to 12.2(25)EWA2.

Release 12.2(25)EW provides the following Cisco IOS software features for the Catalyst 4500 series switch:

Note The following chapter references are for the *Catalyst 4500 Series Switch Cisco IOS Software Configuration Guide*.

- Enhanced NetFlow support on the Catalyst 4500 series switch Supervisor Engine V-10GE
- 10-Gigabit Ethernet support on the Catalyst 4500 series switch Supervisor Engine V-10GE

New Hardware Features in Release 12.2(20)EWA

Release 12.2(20)EWA provides the following new hardware for the Catalyst 4500 series switch:

- WS-X4013+TS—Catalyst 4500 series switch Supervisor Engine II-Plus-TS
- WS-X4506-GB-T—Catalyst 4500 series 6-Port Alternatively-Wired 10/100/1000 Power over Ethernet (PoE) or 1000BASE-X SFP module
- WS-X4948—Catalyst 4948 48-Port 10/100/1000 + 4 SFP in a 1 RU with dual, redundant AC/DC power

New Software Features in Release 12.2(20)EWA

Release 12.2(20)EWA provides the following Cisco IOS software features for the Catalyst 4500 series switch:

Note The following chapter references are for the *Catalyst 4500 Series Switch Cisco IOS Software Configuration Guide*.

- Non-Stop Forwarding Awareness (“Configuring Supervisor Engine Redundancy Using RPR and SSO” chapter)
- Stateful Switchover (“Configuring Supervisor Engine Redundancy Using RPR and SSO” chapter)
- 802.1X with Voice VLAN ID (“Understanding and Configuring 802.1X Port-Based Authentication” chapter)
- Forced 10/100 Auto Negotiation (“Configuring Interfaces” chapter)

New Hardware Features in Release 12.2(20)EW

Release 12.2(20)EW provides the following new hardware for the Catalyst 4500 series switch:

- WS-X4124-RJ45—Catalyst 4500 series 24-port 10/100(RJ-45) module
- WS-X4224-RJ45V—Catalyst 4500 series Power over Ethernet (PoE) 10/100-Mbps, 24-port (RJ-45) 802.3af
- WS-X4448-GB-SFP—Catalyst 4500 series 48-Port 1000BASE-X SFP module
- WS-X4524-GB-RJ45V—Catalyst 4500 series Power over Ethernet (PoE) 10/100/1000-Mbps, 24-port (RJ-45) 802.3af

New Software Features in Release 12.2(20)EW

Release 12.2(20)EW provides the following Cisco IOS software features for the Catalyst 4500 series switch:

Note The following chapter references are for the *Catalyst 4500 Series Switch Cisco IOS Software Configuration Guide*.

- Community PVLAN (“Configuring Private VLANs” chapter)
- SPAN ACL Filtering (“Configuring SPAN and RSPAN” chapter)
- DHCP Client Autoconfiguration (“Configuring the Switch for the First Time” chapter)
- Software-based IPv6

For information on the IPv6 feature for LAN and WAN interfaces, refer to the following URL:

http://www.cisco.com/univercd/cc/td/doc/product/software/ios122/122newft/122t/122t13/ipv6_vgf.htm

For limitations of IPv6 support on the Catalyst 4500 series switch, refer to the “Unsupported Features” section on page 21.

New Hardware Features in Release 12.2(18)EW

Release 12.2(18)EW provides the following new hardware for the Catalyst 4500 series switch:

- WS-X4516—Catalyst 4500 series switch Supervisor Engine V
- WS-C4510R—Catalyst 4500 series switch chassis with 10 slots (supports Supervisor Engine V only)
- WS-X4148-FE-BD-LC—Catalyst 4500 series switch 48-port 100BASE-BX10-D module
- WS-X4248-RJ45V—Catalyst 4500 series switch Power over Ethernet (PoE) 10/100-Mbps, 48 port (RJ-45)
- WS-X4248-RJ21V—Catalyst 4500 series switch Power over Ethernet (PoE) 10/100-Mbps, 48 port telco (4xRJ-21)
- WS-X4548-GB-RJ45V—Catalyst 4500 series switch Power over Ethernet (PoE) 48-port 10/100/1000-Mbps (RJ-45)

New Software Features in Release 12.2(18)EW

Release 12.2(18)EW provides the following Cisco IOS software features for the Catalyst 4500 series switch:

Note The following chapter references are for the *Catalyst 4500 Series Switch Cisco IOS Software Configuration Guide*.

- 802.1Q Tunneling (Q in Q) (“Configuring 802.1Q and Layer 2 Protocol Tunneling” chapter)
- Layer 2 Protocol Tunneling (“Configuring 802.1Q and Layer 2 Protocol Tunneling” chapter)
- Storm Control (“Configuring Port-Based Traffic Control” chapter)
- Sticky Port Security (“Configuring Port Security” chapter)
- 802.1X with Port Security (“Understanding and Configuring 802.1X Port-Based Authentication” chapter)
- 802.1X Accounting (“Understanding and Configuring 802.1X Port-Based Authentication” chapter)
- SmartPort Macros (“Configuring SmartPort Macros” chapter)
- Chassis and Inline Power Management (“Environmental Monitoring and Power Management” chapter)

For more information on these features, refer to these publications:

- *Catalyst 4500 Series Switch Cisco IOS Software Configuration Guide* at the following URL:

  http://www.cisco.com/univercd/cc/td/doc/product/lan/cat4000/12_2_18/config/index.htm
- *Catalyst 4500 Series Switch Cisco IOS Command Reference* at the following URL:

  http://www.cisco.com/univercd/cc/td/doc/product/lan/cat4000/12_2_18/command/index.htm

New Hardware Features in Release 12.1(20)EW

There are no new hardware features in Release 12.1(20)EW.

New Software Features in Release 12.1(20)EW

Release 12.1(20)EW provides the following Cisco IOS features for the Catalyst 4500 series switch:

Note The following chapter references are for the *Catalyst 4500 Series Switch Cisco IOS Software Configuration Guide*.

- Internet Group Management Protocol (IGMP) v3 snooping enhancements ("Configuring IGMP Snooping and Filtering" chapter)
- Virtual Routing Forwarding-lite ("Configuring VRF-lite" chapter)
- Remote Switched Port ANalyzer ("Configuring SPAN and RSPAN" chapter)
- Pragmatic General Multicast (PGM)
- Port Security on PVLAN ports
- Dynamic ARP Inspection on PVLAN ports
- Authentication, authorization, and accounting using TACACS+ and RADIUS protocol
- Internetwork Packet Exchange (IPX)/AppleTalk access control lists (ACLs)
  - <1000-1099> IPX SAP access list
  - <800-899> IPX standard access list
  - <900-999> IPX extended access list
- Transceiver Optical Monitoring
- Enhanced Simple Network Management Protocol (SNMP) Management Information Base (MIB) support

For more information on these features, refer to these publications:

- *Catalyst 4500 Series Switch Cisco IOS Software Configuration Guide* at the following URL:

  http://www.cisco.com/univercd/cc/td/doc/product/lan/cat4000/12_2_18/config/index.htm
- *Catalyst 4500 Series Switch Cisco IOS Command Reference* at the following URL:

  http://www.cisco.com/univercd/cc/td/doc/product/lan/cat4000/12_2_18/command/index.htm

New Hardware Features in Release 12.1(19)EW

Release 12.1(19)EW provides the following new hardware for the Catalyst 4500 series switch:

- WS-X4013+—Catalyst 4500 series Supervisor Engine II-Plus
- WS-X4548-GB-RJ45—Catalyst 4500 series 48-port 10/100/1000 RJ-45 line card
- WS-X4302-GB—Catalyst 4500 series 2-port Gigabit Ethernet line card
- DWDM-GBIC-xx.yy—Cisco DWDM GBICs
- WDM-GBIC-REC—Cisco receive-only 1000BASE-WDM GBIC

New Software Features in Release 12.1(19)EW

Release 12.1(19)EW provides the following Cisco IOS software features for the Catalyst 4500 series switch:

Note The following chapter references are for the *Catalyst 4500 Series Switch Cisco IOS Software Configuration Guide*.

- Storm Control (“Configuring Port-Based Traffic Control” chapter)
- Per-VLAN Rapid Spanning Tree (“Understanding and Configuring STP” chapter)
- Trusted boundary (“Configuring QoS” chapter)
- Auto QoS (“Configuring QoS” chapter)
- Secure access with Secure Shell Protocol (SSHv2)
- **show interface capabilities** command (“Configuring Port-Based Traffic Control” chapter)
- NetFlow version 8 (“Configuring NetFlow Statistics Collection” chapter)
- Port ACL (“Configuring Network Security with ACLs” chapter)
- Dynamic ARP Inspection (“Understanding and Configuring Dynamic ARP Inspection” chapter)
- IP source guard (“Configuring DHCP Snooping and IP Source Guard” chapter)

Note For any network deployment of Dynamic ARP Inspection, IP Source Guard and the DHCP snooping features, it is essential that you read the white paper “Catalyst 4500 Security Services Best Practices” at the URL:
http://www.cisco.com/en/US/partner/products/hw/switches/ps4324/prod_white_papers_list.html

- CPU port sniffing (“Configuring SPAN” chapter)
- Packet type filtering (“Configuring SPAN” chapter)
- Ingress packets (“Configuring SPAN” chapter)
- Port flood blocking (“Port Unicast and Multicast Flood Blocking” chapter)
- 802.1X with VLAN assignment (“Configuring 802.1X Port-Based Authentication” chapter)
- 802.1X with guest VLAN (“Configuring 802.1X Port-Based Authentication” chapter)
- IGMP version 3 (“Configuring IGMP Snooping and Filtering” chapter)
- Unidirectional link routing (“Configuring Unidirectional Link Routing” chapter in the *Cisco IP and IP Routing Configuration Guide)*
- Inline power preallocation (“Environmental Monitoring and Power Management” chapter)
- IPX performance enhancements

  The delivery latency for IPX packet forwarding has been significantly improved. For lock-step based protocols with single or small packet window sizes, this results in an increased throughput rate and better responsiveness.

For more information on these features, refer to these publications:

- *Catalyst 4500 Series Switch Cisco IOS Software Configuration Guide* at the following URL:

  http://www.cisco.com/univercd/cc/td/doc/product/lan/cat4000/12_1_19/config/index.htm

- *Catalyst 4500 Series Switch Cisco IOS Command Reference* at the following URL:
  http://www.cisco.com/univercd/cc/td/doc/product/lan/cat4000/12_1_19/command/index.htm

New Hardware Features in Release 12.1(13)EW

Release 12.1(13)EW provides the following new hardware for the Catalyst 4500 series switch:

- WS-F4531—Catalyst 4500 Series NetFlow Services Card
- WS-G5483—Cisco 1000BASE-T GBIC
- WS-X4604-GWY—Cisco Catalyst 4000 Access Gateway Module
- WS-X4148-FE-LX-MT—48-port 100BASE-LX10 Fast Ethernet switching module

New Software Features in Release 12.1(13)EW

Release 12.1(13)EW provides the following Cisco IOS software features for the Catalyst 4500 series switch:

- The new Layer 2 features are as follows:

  Note The following chapter references are for the *Catalyst 4500 Series Switch Cisco IOS Software Configuration Guide*

  - VLAN Management Policy Server (VMPS) client (“Configuring Dynamic VLAN Membership” chapter)
  - Support for 9216 byte frames (“Configuring Interfaces” chapter)
  - Unicast MAC filtering (“Configuring Network Security with ACLs” chapter)
  - Layer 2 traceroute (“Checking Port Status and Connectivity” chapter)
  - Unidirectional Ethernet port (“Configuring Unidirectional Ethernet” chapter)
  - Private VLAN DHCP snooping (“Configuring PVLANs” chapter)
  - Port security (“Configuring Port Security” chapter)
- The new Layer 3 features are as follows:
  - PBR (policy-based routing) (“Configuring Policy-Based Routing” chapter)
  - Dynamic Buffer Limiting (“Understanding and Configuring QoS” chapter)
- Secure access via secure shell (SSH) Protocol
- Intermediate System to Intermediate System (IS-IS)
- NetFlow VLAN Statistics
- NetFlow Statistics Collection
- NetFlow Statistics Export Version 1 and Version 5
- IEEE 802.3ad (“Understanding and Configuring EtherChannel” chapter)
- Enhanced SNMP MIB support

For more information on these features, refer to these publications:

- *Catalyst 4500 Series Switch Cisco IOS Software Configuration Guide* at the following URL:
  http://www.cisco.com/univercd/cc/td/doc/product/lan/cat4000/12_1_13/config/index.htm
- *Catalyst 4500 Series Switch Cisco IOS Command Reference* at the following URL:
  http://www.cisco.com/univercd/cc/td/doc/product/lan/cat4000/12_1_13/command/index.htm

New Hardware Features in Release 12.1(12c)EW

Release 12.1(12c)EW provides the following new hardware for the Catalyst 4500 series switch:

- PWR-C45-1000AC—Catalyst 4500 1000 Watt AC Power Supply (data only)
- PWR-C45-2800AC—Catalyst 4500 2800 Watt AC Power Supply (with integrated voice)
- WS-C4503—Catalyst 4503 chassis with 3 slots and a fan
- WS-C4506—Catalyst 4506 chassis with 6 slots and a fan
- WS-C4507R—Cisco Catalyst 4507 chassis with 7 slots and a fan (supports Supervisor Engine IV only)
- WS-X4515—Cisco Catalyst 4500 Supervisor Engine IV
- WS-X4515/2—Cisco Catalyst 4507R Redundant Supervisor Engine IV
- CWDM-GBIC-1470—Longwave 1470 nm laser single-mode
- CWDM-GBIC-1490—Longwave 1490 nm laser single-mode
- CWDM-GBIC-1510—Longwave 1510 nm laser single-mode
- CWDM-GBIC-1530—Longwave 1530 nm laser single-mode
- CWDM-GBIC-1550—Longwave 1550 nm laser single-mode
- CWDM-GBIC-1570—Longwave 1570 nm laser single-mode
- CWDM-GBIC-1590—Longwave 1590 nm laser single-mode
- CWDM-GBIC-1610—Longwave 1610 nm laser single-mode

New Software Features in Release 12.1(12c)EW

Release 12.1(12c)EW provides the following Cisco IOS features for the Catalyst 4500 series switch.

- The new Layer 2 features are as follows:

  Note The following chapter references are for the *Catalyst 4500 Series Switch Cisco IOS Software Configuration Guide*.

  - Support for 4096 VLANs per switch (refer to the “Understanding and Configuring VLANs” chapter)
  - Support for 1600 byte-sized frames to enable two nested 802.1q headers (802.1q in 802.1q pass-through) and Multiprotocol Label Switching (MPLS) on the network (refer to the “Understanding and Configuring VLANs" chapter)

  - Spanning-tree Loop guard and PortFast BPDU Filtering (refer to the “Configuring STP Features” chapter)
  - 802.1s and 802.1w (refer to the “Understanding and Configuring Multiple Spanning Trees” chapter)
  - IGMP filtering on trunks
  - PVLAN isolated trunk port (refer to the “Configuring PVLANs” chapter)
  - DHCP snooping (refer to the “Understanding and Configuring DHCP Snooping" chapter)
  - 802.1X port-based authentication (refer to the "Configuring 802.1X Port-Based Authentication" chapter)
  - VLAN access control lists (refer to the "Configuring Network Security with ACLs" chapter)
- The new Layer 3 features are as follows:
  - Software routing IPX and Appletalk
- Supervisor Engine Redundancy (refer to the “Configuring Supervisor Engine Redundancy on the Catalyst 4507R” chapter)
- Support for SPAN sessions with both received and transmitted traffic (refer to the “Configuring SPAN” chapter)

For more information on these features, refer to these publications:

- *Catalyst 4500 Series Switch Cisco IOS Software Configuration Guide* at the following URL:

  http://www.cisco.com/univercd/cc/td/doc/product/lan/cat4000/12_1_12/config/index.htm
- *Catalyst 4500 Series Switch Cisco IOS Command Reference* at the following URL:

  http://www.cisco.com/univercd/cc/td/doc/product/lan/cat4000/12_1_12/command/index.htm

New Hardware Features in Release 12.1(11b)EW

Release 12.1(11b)EW provides initial support of the Cisco IOS software for the Catalyst 4006 switch with Supervisor Engine III and the following modules:

- WS-X4148-RJ45V—48-port inline power 10/100BASE-TX switching module with inline power support
- WS-X4095-PEM—Catalyst 4000 DC Power Entry Module
- WS-P4603-2PSU—Catalyst 4000 Auxiliary Power Shelf (3-slot) including two WS-X4608 power supplies
- WS-X4608—Catalyst 4603 Power Supply Unit for WS-P4603

New Software Features in Release 12.1(11b)EW

Release 12.1(11b)EW provides initial support of the Cisco IOS software for the Catalyst 4006 switch with Supervisor Engine III.

- For more information on the following features, refer to these publications:
  - *Software Configuration Guide for the Catalyst 4006 Switch with Supervisor Engine III* at the following URL:

    http://www.cisco.com/univercd/cc/td/doc/product/lan/cat4000/12_1_11/config/index.htm

  - *Command Reference for the Catalyst 4006 Switch with Supervisor Engine III* at the following URL:

    http://www.cisco.com/univercd/cc/td/doc/product/lan/cat4000/12_1_11/command/index.htm

Release 12.1(11b)EW provides these features:

- Multiple VLAN access port (only for data and voice VLANs)
- Inline power management for Cisco IP phones and Aironet 350 Wireless Access Points on the WS-X4148-RJ45V module.
- Power redundancy
- Multicast flooding suppression for STP changes
- IGMP filtering

New Hardware Features in Release 12.1(8a)EW

Release 12.1(8a)EW provides initial support of the Cisco IOS software for the Catalyst 4006 switch with Supervisor Engine III and the following modules:

- WS-X4124-FX-MT—24-port 100BASE-FX Fast Ethernet switching module
- WS-X4148-FX-MT—48-port 100BASE-FX Fast Ethernet switching module
- WS-X4148-RJ—48-port 10/100 Fast Ethernet RJ-45 switching module
- WS-X4148-RJ21—48-port 10/100-Mbps Fast Ethernet RJ-21 (telco connector) switching module
- WS-X4148-RJ45V—48-port inline power 10/100BASE-TX switching module: data traffic only (inline power not supported in Cisco IOS Release 12.1(8a)EW)
- WS-X4232-GB-RJ—32-port 10/100 Fast Ethernet RJ-45, plus 2-port 1000BASE-X (GBIC) Gigabit Ethernet switching module
- WS-X4232-RJ-XX—32-port 10/100 Fast Ethernet RJ-45 modular uplink switching module
- WS-X4306-GB—6-port 1000BASE-X (GBIC) Gigabit Ethernet switching module
- WS-X4418-GB—18-port 1000BASE-X (GBIC) Gigabit Ethernet switching module
- WS-X4412-2GB-T—12-port 1000BASE-T Gigabit Ethernet and 2-GBIC ports switching module
- WS-X4424-GB-RJ45—24-port 10/100/1000BASE-T Gigabit Ethernet switching module
- WS-X4448-GB-LX—48-port 1000BASE-LX Gigabit Ethernet Fiber Optic interface switching module
- WS-X4448-GB-RJ45—48-port 10/100/1000BASE-T Gigabit Ethernet switching module

New Software Features in Release 12.1(8a)EW

Release 12.1(8a)EW provides initial support of the Cisco IOS software for the Catalyst 4006 switch with Supervisor Engine III.

- For more information on the following features, refer to these publications:
  - *Software Configuration Guide for the Catalyst 4006 Switch with Supervisor Engine III* at the following URL:

    http://www.cisco.com/univercd/cc/td/doc/product/lan/cat4000/12_18a/config/index.htm

  - *Command Reference for the Catalyst 4006 Switch with Supervisor Engine III* at the following URL:

    http://www.cisco.com/univercd/cc/td/doc/product/lan/cat4000/12_18a/command/index.htm

Release 12.1(8a)EW provides these features:

- The Layer 2 features are as follows:

  Note The following chapter references are for the *Software Configuration Guide for the Catalyst 4006 Switch with Supervisor Engine III*.

  - Layer 2 switch ports and VLAN trunks with the Dynamic Trunking Protocol (DTP) (refer to the "Configuring Layer 2 Ethernet Interfaces" chapter)
  - VLANs (refer to the "Understanding and Configuring VLANs" chapter)
  - Private VLANs (refer to the "Understanding and Configuring Private VLANs" chapter)
  - VLAN Trunk Protocol (VTP) and VTP domains (refer to the "Understanding and Configuring VTP" chapter)
  - Spanning Tree Protocol (refer to the "Understanding and Configuring STP" chapter)
  - Spanning tree PortFast, UplinkFast, and BackboneFast (refer to the "Configuring STP Features" chapter)
  - IGMP snooping (refer to the "Understanding and Configuring IGMP Snooping" chapter)
- Cisco Express Forwarding for IP unicast traffic (refer to the "Configuring CEF" chapter)
- Standard Domain Naming System (DNS) support (refer to the Cisco IOS *Network Protocols Configuration Guide*, Part 1, and the Cisco IOS *Network Protocols Command Reference*, Part 1)
- Dynamic Host Configuration Protocol (DHCP); (refer to Cisco IOS *IP and IP Routing Configuration Guide*, Release 12.1, "Configuring DHCP")
- Bootstrap Protocol (BOOTP) relay (refer to the Cisco IOS *Network Protocols Configuration Guide*, Part 1, and the Cisco IOS *Network Protocols Command Reference*, Part 1)
- Cisco Discovery Protocol (CDP); (refer to the "Understanding and Configuring CDP" chapter)
- Standard IP access control lists (ACLs) at wire rate (refer to the "Configuring Network Security" chapter)
- The Layer 3 features are as follows:
  - Layer 3 routing protocols (refer to the Cisco IOS *Network Protocols Configuration Guides*, Parts 1 and 2, and the Cisco IOS *Network Protocols Command Reference*, Parts 1 and 2):

    Static IP routing
    IP routing protocols
    IP multicast routing protocols
  - Layer-3 related protocols (refer to the Cisco IOS Release 12.1 *Network Protocols Configuration Guides*, Parts 1 and 2, and the Cisco IOS Release 12.1 *Network Protocols Command Reference*, Parts 1 and 2):

    Internet Group Management Protocol (IGMP) v1 and v2
    Cisco Group Membership Protocol (CGMP) server support
    Full Internet Control Message Protocol (ICMP) support
    ICMP Router Discovery Protocol (IRDP)
    Multicast Source Discovery Protocol (MSDP)
    Multicast Border Gateway Protocol (MBGP)

- Multiple-Hot Standby Routing Protocol (M-HSRP; refer to "Hot Standby Router Protocol" in the Cisco IOS *Network Protocols Configuration Guide*, Part 1, and the Cisco IOS *Network Protocols Command Reference*, Part 1)
- Access control using several supported authentication methods (refer to the "Configuring the Switch for the First Time" chapter)
- Switched Port Analyzer (SPAN); (refer to the "Understanding and Configuring SPAN" chapter)
- Quality of Service (QoS); (refer to the "Understanding and Configuring QoS" chapter)

Upgrading the System Software

In most cases, upgrading the switch to a newer release of Cisco IOS software does not require a ROMMON upgrade. However, if you are running an early release of Cisco IOS software and plan to upgrade, refer to the following tables for the minimum Cisco IOS image and the recommended ROMMON release, respectively.

Caution Most supervisor engines have the required ROMMON release. However, due to caveat CSCed25996, we recommend that you upgrade your ROMMON to the recommended release.

Table 8 Supervisor Engine and Minimum Cisco IOS Release

Supervisor Engine	Minimum Cisco IOS Release
IV	12.1(12c)EW or 12.1(14)E
II-Plus	12.1(19)EW
II-Plus-10GE	12.2(25)SG
V	12.2(18)EW
II-Plus-TS	12.2(20)EWA
V-10GE	12.2(25)EW
ME-X4924-10GE	12.2(31)SGA

Table 9 Supervisor Engine and Recommended ROMMON Release

Supervisor Engine	Minimum ROMMON Release	Recommended ROMMON Release
IV	12.1(12r)EW	12.2(31r)SGA1
II-Plus	12.1(19r)EW	12.2(31r)SGA1
II-Plus-10GE	12.2(25r)SG	12.2(31r)SGA1
V	12.1(20r)EW1	12.2(31r)SGA1
II-Plus-TS	12.2(20r)EW	12.2(31r)SGA1

Table 9 Supervisor Engine and Recommended ROMMON Release

Supervisor Engine	Minimum ROMMON Release	Recommended ROMMON Release
V-10GE	12.2(25r)EW	12.2(31r)SGA1
ME-X4924-10GE	12.2(25)EW	12.2(31r)SGA1

Table 10 ROMMON Release and Promupgrade Programs

ROMMON Release	Promupgrade Program
12.1(11br)EW	cat4000-sup3-promupgrade-121_11br_EW
12.1(12r)EW	cat4000-sup3-promupgrade-121_12r_ew
12.1(19r)EW	cat4000-ios-promupgrade-121_19r_EW
12.1(20r)EW1	cat4000-ios-promupgrade-121_20r_EW1
12.1(20r)EW2	cat4000-ios-promupgrade-121_20r_EW2
12.2(20r)EW	cat4000-ios-promupgrade-122_20r_EW
12.2(20r)EW1	cat4000-ios-promupgrade-122_20r_EW1
12.2(31r)SG3	cat4500-ios-promupgrade-122_31r_SG3
12.2(31r)SGA1	cat4500-ios-promupgrade-122_31r_SGA1

The following sections describe how to upgrade your switch software:

- Guidelines for Upgrading the ROMMON, page 40
- Upgrading the Supervisor Engine ROMMON from the Console, page 40
- Upgrading the Supervisor Engine ROMMON Remotely Using Telnet, page 43
- Upgrading the Cisco IOS Software, page 48

Guidelines for Upgrading the ROMMON

Caution If your supervisor engine is shipped with a newer version of ROMMON then do not downgrade! The new ROMMON will have board settings based on a hardware revision of components, and old settings will not work.

Upgrading the Supervisor Engine ROMMON from the Console

Caution To avoid actions that might make your system unable to boot, read this entire section before starting the upgrade.

Note The examples in this section use the programmable read-only memory (PROM) upgrade version 12.1(20r)EW1 and Cisco IOS Release 12.1(20)EW1. For other releases, replace the ROMMON release and Cisco IOS software release with the appropriate releases and filenames.

Follow this procedure to upgrade your supervisor engine ROMMON:

Step 1 Directly connect a serial cable to the console port of the supervisor engine.

Note This section assumes that the console baud rate is set to 9600 (default). If you want to use a different baud rate, change the configuration register value for your switch.

Step 2 Download the cat4000-ios-promupgrade-121_20r_EW1 program from Cisco.com, and place it on a TFTP server in a directory that is accessible from the switch that will be upgraded.

The cat4000-ios-promupgrade-121_20r_EW1 programs are available on Cisco.com at the same location from which you download Catalyst 4000 system images.

Step 3 Use the **dir bootflash:** command to ensure that there is sufficient space in Flash memory to store the PROM upgrade image. If there is insufficient space, delete one or more images, and then issue the **squeeze bootflash:** command to reclaim the space.

If you are using a CompactFlash card, replace **bootflash:** with **slot0:**.

Step 4 Download the cat4000-ios-promupgrade-121_20r_EW1 program into Flash memory using the **copy tftp** command.

The following example shows how to download the PROM upgrade image cat4000-ios-promupgrade-121_20r_EW1 from the remote host 172.20.58.78 to bootflash:

```
Switch# copy tftp: bootflash:
Address or name of remote host [172.20.58.78]?
Source filename [cat4000-ios-promupgrade-121_20r_EW1]?
Destination filename [cat4000-ios-promupgrade-121_20r_EW1]?
Accessing tftp://172.20.58.78/cat4000-ios-promupgrade-121_20r_EW1...
Loading cat4000-ios-promupgrade-121_20r_EW1 from 172.20.58.78 (via
FastEthernet2/1):!!!
```

```
 ************************************************************

 Rom Monitor Program Version 12.1(12r)EW


.
.(output truncated)
.

 Established physical link 100MB Half Duplex
 Network layer connectivity may take a few seconds
rommon 1 >
```

Step 6 Run the PROM upgrade program by entering this command:
boot bootflash:cat4000-ios-promupgrade-121_20r_EW1

Caution No intervention is necessary to complete the upgrade. To ensure a successful upgrade, do not interrupt the upgrade process. Do not perform a reset, power cycle, or OIR of the supervisor engine until the upgrade is complete.

The following example shows the output from a successful upgrade, followed by a system reset:

```
rommon 2 > boot bootflash:cat4000-ios-promupgrade-121_20r_EW1

************************************************************
 *                                                          *
 * Rom Monitor Upgrade Utility For WS-X4515 System        *
 * This upgrades flash Rom Monitor image to the latest     *
 *                                                          *
 * Copyright (c) 2002, 2003 by Cisco Systems, Inc.         *
 * All rights reserved.                                     *
 *                                                          *
 ************************************************************

 Image size = 314.236 KBytes

 Maximum allowed size = 511.75 KBytes


 Upgrading your PROM... DO NOT RESET the system
 unless instructed or upgrade of PROM will fail !!!

 Beginning erase of 0x80000 bytes at offset 0x3f80000...  Done!

 Beginning write of prom  (0x4e8ec bytes at offset 0x3f80000)...

 This could take as little as 30 seconds or up to 2 minutes.
 Please DO NOT RESET!

 Success! The prom has been upgraded successfully.
 System will reset itself and reboot in about 15
```

Step 7 Boot the Cisco IOS software image, and enter the **show version** command to verify that ROMMON has been upgraded to 12.1(20r)EW1.

Step 8 Use the **delete** command to delete the PROM upgrade program from bootflash and the **squeeze** command to reclaim unused space.

The following example shows how to delete the **cat4000-ios-promupgrade-121_20r_EW1** image from bootflash and reclaim unused space:

```
Switch# delete bootflash:cat4000-ios-promupgrade-121_20r_EW1
Switch# squeeze bootflash:

All deleted files will be removed, proceed (y/n) [n]? y

Squeeze operation may take some time, proceed (y/n) [n]? y
Switch#
```

Step 9 Use the **show version** command to verify that the ROMMON has been upgraded

```
Switch#show version
Cisco Internetwork Operating System Software
IOS (tm) Catalyst 4500 L3 Switch Software (cat4500-I9S-M), Version 12.1(20)EW, E
ARLY DEPLOYMENT RELEASE SOFTWARE (fc1)
TAC Support: http://www.cisco.com/tac
Copyright (c) 1986-2003 by cisco Systems, Inc.
Compiled Wed 22-Oct-03 23:42 by kellmill
Image text-base: 0x00000000, data-base: 0x00F56DDC

ROM: 12.1(20r)EW1
Dagobah Revision 86, Swamp Revision 28

Switch uptime is 0 day, 0 hour, 5 minutes
System returned to ROM by reload
System image file is "bootflash:cat4500-i9s-mz.121-20.EW1"

cisco WS-C4503 (XPC8245) processor (revision 7) with 524288K bytes of memory.
Processor board ID FOX06460YD8
Last reset from Reload
3 Ethernet/IEEE 802.3 interface(s)
51 FastEthernet/IEEE 802.3 interface(s)
2 Gigabit Ethernet/IEEE 802.3 interface(s)
403K bytes of non-volatile configuration memory.

Configuration register is 0x2102

Switch#
```

The ROMMON has now been upgraded.

See the "Upgrading the Cisco IOS Software" section on page 48 for instructions on how to upgrade the Cisco IOS software on your switch.

Upgrading the Supervisor Engine ROMMON Remotely Using Telnet

Caution To avoid actions that might make your system unable to boot, read this entire section before starting the upgrade.

Follow this procedure to upgrade your supervisor engine ROMMON to Release 12.1(20r)EW1. This procedure can be used when console access is not available and when the ROMMON upgrade must be performed remotely.

Note In the following section, use the PROM upgrade version cat4000-ios-promupgrade-121_20r_EW1.

Step 1 Establish a Telnet session to the supervisor engine.

Note In the following discussion, we assume that at least one IP address has been assigned to either an SVI or a routed port.

Step 2 Download the cat4000-ios-promupgrade-121_20r_EW1 program from Cisco.com, and place it on a TFTP server in a directory that is accessible from the switch to be upgraded.

The cat4000-ios-promupgrade-121_20r_EW1 programs are available on Cisco.com at the same location from which you download Catalyst 4500 system images.

Step 3 Use the **dir bootflash:** command to ensure that there is sufficient space in Flash memory to store the PROM upgrade image. If there is insufficient space, delete one or more images, and then issue the **squeeze bootflash:** command to reclaim the space.

If you are using a CompactFlash card, replace **bootflash:** with **slot0:**.

Step 4 Download the cat4000-ios-promupgrade-121_20r_EW1 program into Flash memory using the **copy tftp** command.

The following example shows how to download the PROM upgrade image cat4000-ios-promupgrade-121_20r_EW1 from the remote host 172.20.58.78 to bootflash:

```
Switch# copy tftp: bootflash:
Address or name of remote host [172.20.58.78]?
Source filename [cat4000-ios-promupgrade-121_20r_EW1]?
Destination filename [cat4000-ios-promupgrade-121_20r_EW1]?
Accessing tftp://172.20.58.78/cat4000-ios-promupgrade-121_20r_EW1...
Loading cat4000-ios-promupgrade-121_20r_EW1 from 172.20.58.78 (via
FastEthernet2/1):!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!
[OK - 455620 bytes]

455620 bytes copied in 2.644 secs (172322 bytes/sec)
Switch#
```

Step 5 Use the **no boot system flash bootflash:***file_name* command to clear all BOOT variable commands in the configuration file. In this example, the BOOT variable was set to boot the image cat4000-i5s-mz.121-19.EW1.bin from bootflash:

```
Switch# configure terminal
Switch(config)# no boot system flash bootflash:cat4000-i5s-mz.121-19.EW1.bin
Switch(config)# exit
Switch# write
Building configuration...
Compressed configuration from 3641 to 1244 bytes [OK]
Switch#

Use the boot system flash bootflash:file_name command to set the BOOT variable. You will
use two BOOT commands: one to upgrade the ROMMON and a second to load the Cisco IOS
software image after the ROMMON upgrade is complete. Notice the order of the BOOT
variables in the example below. At bootup the first BOOT variable command upgrades the
```

ROMMON. When the upgrade is complete the supervisor engine will autoboot, and the second BOOT variable command will load the Cisco IOS software image specified by the second BOOT command.

Note The **config-register** must be set to autoboot.

In this example, we assume that the console port baud rate is set to 9600 bps and that the config-register is set to 0x0102.

Use the config-register command to autoboot using image(s) specified by the BOOT variable. Configure the BOOT variable to upgrade the ROMMON and then autoboot the IOS image after the ROMMON upgrade is complete. In this example, we are upgrading the ROMMON to version 12.1(20r)EW1. After the ROMMON upgrade is complete, the supervisor engine will boot Cisco IOS software Release 12.1(20)EW1.

config-register to 0x0102.

```
Switch# configure terminal
Switch(config)# boot system flash bootflash:cat4000-ios-promupgrade-121_20r_EW1
Switch(config)# boot system flash bootflash:cat4000-i9s-mz.121-20.EW1
Switch(config)# config-register 0x0102
Switch(config)# exit
Switch# write
Building configuration...
Compressed configuration from 3641 to 1244 bytes [OK]
Switch#
```

Step 6 Use the **show bootvar** command to verify the boot string. The BOOT variable in this example will first run the PROM upgrade to upgrade ROMMON. Then, the upgrade software will reload and the supervisor engine will load the Cisco IOS software image.

```
Switch#sh bootvar
BOOT variable = bootflash:cat4000-ios-promupgrade-121_20r_EW1,1;bootflash:cat400
0-i9s-mz.121-20.EW1,1
CONFIG_FILE variable does not exist
BOOTLDR variable does not exist
Configuration register is 0x2102
```

Step 7 Run the PROM upgrade program by issuing the **reload** command. Issuing this command will terminate your Telnet session.

Caution Verify the boot string in step 6. No intervention is necessary to complete the upgrade. To ensure a successful upgrade, do not interrupt the upgrade process. Do not perform a reset, power cycle, or OIR of the supervisor engine until the upgrade is complete.

The following example shows the console port output from a successful ROMMON upgrade followed by a system reset. Your Telnet session will be disconnected during the ROMMON upgrade, so you will not see this output. This step could take 2-3 minutes to complete. You will need to reconnect your Telnet session after 2-3 minutes when the Cisco IOS software image and the interfaces are loaded.

```
Switch#reload
Proceed with reload? [confirm]

1d05h: %SYS-5-RELOAD: Reload requested
```

****

```
 *                                                          *
 * Welcome to Rom Monitor for WS-X4515 System.              *
 * Copyright (c) 2002 by Cisco Systems, Inc.                *
 * All rights reserved.                                     *
 *                                                          *
 ************************************************************

 Rom Monitor Program Version 12.1(12r)EW

 Board type 2, Board revision 7
 Swamp FPGA revision 28, Dagobah FPGA revision 86

***** The system will autoboot in 5 seconds *****


 Type control-C to prevent autobooting.
 . . . . .
 Established physical link 100MB Full Duplex
 Network layer connectivity may take a few seconds


 ******** The system will autoboot now ********


 config-register = 0x0102
 Autobooting using BOOT variable specified file.....

 Current BOOT file is --- bootflash:cat4000-ios-promupgrade-121_20r_EW1




 ************************************************************
 *                                                          *
 * Rom Monitor Upgrade Utility For  WS-X4515 System         *
 * This upgrades flash Rom Monitor image to the latest      *
 *                                                          *
 * Copyright (c) 2002, 2003 by Cisco Systems, Inc.          *
 * All rights reserved.                                     *
 *                                                          *
 ************************************************************

 Image size = 314.236 KBytes

 Maximum allowed size = 511.75 KBytes


 Upgrading your PROM... DO NOT RESET the system
 unless instructed or upgrade of PROM will fail !!!

 Beginning erase of 0x80000 bytes at offset 0x3f80000...  Done!

 Beginning write of prom  (0x4e8ec bytes at offset 0x3f80000)...

 This could take as little as 30 seconds or up to 2 minutes.
 Please DO NOT RESET!

 Success! The prom has been upgraded successfully.
 System will reset itself and reboot in about 15
.
.(output truncated)
.
******** The system will autoboot now ********
```

```
 config-register = 0x0102
 Autobooting using BOOT variable specified file.....

 Current BOOT file is --- bootflash:cat4000-i9s-mz.121-20.EW1

Rommon reg: 0x56000380

Running IOS...

Decompressing the image
################################################################################
################################################################################
################################################################################
################################################################################
################################################################################
########################################################################## [OK]
```

Step 8 Use the **no boot system flash bootflash:***file_name* command to clear the BOOT command used to upgrade the ROMMON.

```
Switch# configure terminal
Switch(config)# no boot system flash bootflash:cat4000-ios-promupgrade-121_20r_EW1
Switch(config)# exit
Switch# write
Building configuration...
Compressed configuration from 3641 to 1244 bytes [OK]
Switch#
```

Step 9 Use the **show version** command to verify that the ROMMON has been upgraded.

```
Switch#show version
Cisco Internetwork Operating System Software
IOS (tm) Catalyst 4000 L3 Switch Software (cat4000-I9S-M), Version 12.1(20)EW, E
ARLY DEPLOYMENT RELEASE SOFTWARE (fc1)
TAC Support: http://www.cisco.com/tac
Copyright (c) 1986-2003 by cisco Systems, Inc.
Compiled Wed 22-Oct-03 23:42 by kellmill
Image text-base: 0x00000000, data-base: 0x00F56DDC

ROM: 12.1(20r)EW1
Dagobah Revision 86, Swamp Revision 28

Switch uptime is 0 day, 0 hour, 5 minutes
System returned to ROM by reload
System image file is "bootflash:cat4000-i9s-mz.121-20.EW1"

cisco WS-C4503 (XPC8245) processor (revision 7) with 524288K bytes of memory.
Processor board ID FOX06460YD8
Last reset from Reload
3 Ethernet/IEEE 802.3 interface(s)
51 FastEthernet/IEEE 802.3 interface(s)
2 Gigabit Ethernet/IEEE 802.3 interface(s)
403K bytes of non-volatile configuration memory.

Configuration register is 0x0102

Switch#
```

Step 10 Use the **delete** command to delete the PROM upgrade program from bootflash and the **squeeze** command to reclaim unused space.

The following example shows how to delete the cat4000-ios-promupgrade-121_20r_EW1 image from bootflash and reclaim unused space:

```
Switch# delete bootflash:cat4000-ios-promupgrade-121_20r_EW1
Switch# squeeze bootflash:

All deleted files will be removed, proceed (y/n) [n]? y

Squeeze operation may take some time, proceed (y/n) [n]? y
Switch#
```

Step 11 Use the **show bootvar** command to verify that the ROMMON upgrade program has been removed from the BOOT variable.

```
Switch#sh bootvar
BOOT variable = bootflash:cat4000-i9s-mz.121-20.EW1,1
CONFIG_FILE variable does not exist
BOOTLDR variable does not exist
Configuration register is 0x0102
```

The ROMMON has now been upgraded.

See the "Upgrading the Cisco IOS Software" section on page 48 for instructions on how to upgrade the Cisco IOS software on your switch.

Upgrading the Cisco IOS Software

Caution To avoid actions that might make your system unable to boot, please read this entire section before starting the upgrade.

Before you proceed, observe the following rules for hostname:

- Do not expect case to be preserved

  Uppercase and lowercase characters look the same to many internet software applications. It may seem appropriate to capitalize a name the same way you might do in English, but conventions dictate that computer names appear all lowercase. For more information, refer to RFC 1178, Choosing a Name for Your Computer.
- Must start with a letter and end with a letter or digit.
- Interior characters can only be letters, digits, and hyphens; periods and underscores not allowed.
- Names must be 63 characters or fewer; hostname of fewer than 10 characters is recommended.
- On most systems, a field of 30 characters is used for the host name and the prompt in the CLI. Longer configuration mode prompts may be truncated.

To upgrade the Cisco IOS software on your Catalyst 4500 series switch, use this procedure:

Step 1 Download Cisco IOS Release 12.1(20)EW from Cisco.com, and place the image on a TFTP server in a directory that is accessible from the supervisor engine that will be upgraded.

Step 2 Use the **dir bootflash:** command to ensure that there is sufficient space in Flash memory to store the **promupgrade** image. If there is insufficient space, delete one or more images, and then enter the **squeeze bootflash:** command to reclaim the space.

If you are using a CompactFlash card, use **slot0:** instead of **bootflash**.

Step 3 Download the software image into Flash memory using the **copy tftp** command.

The following example shows how to download the Cisco IOS software image cat4000-is-mz.121-12c.EW from the remote host **172.20.58.78** to **bootflash**:

```
Switch# copy tftp: bootflash:
Address or name of remote host [172.20.58.78]?
Source filename [cat4000-is-mz121_12c.EW]?
Destination filename [cat4000-is-mz.121-12c.EW]?
Accessing tftp://172.20.58.78/cat4000-is-mz.121-12c.EW...
Loading cat4000-is-mz.121-12c.EW from 172.20.58.78 (via
FastEthernet2/1):!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
|!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
```

Step 6 Use the **config-register** command to set the configuration register to 0x2102.

The following example show how to set the second least significant bit in the configuration register:

```
Switch# configure terminal
Switch(config)# config-register 0x2102
Switch(config)# exit
Switch# write
Building configuration...
Compressed configuration from 3723 to 1312 bytes [OK]
Switch#
```

Step 7 Enter the **reload** command to reset the switch and load the software.

Caution No intervention is necessary to complete the upgrade. To ensure a successful upgrade, do not interrupt the upgrade process by performing a reset, power cycle, or OIR of the supervisor, for at least five minutes.

The following example shows the output from a successful upgrade followed by a system reset:

```
Switch# reload
Rommon reg: 0x2B004180

Upgrading FPGA...

Decompressing the image
############### [OK]

 ******************************************************
 *                                                    *
 * WS-X4014 FPGA Upgrade Utility For WS-X4014 Machines *
 *                                                    *
 * Copyright (c) 2002 by Cisco Systems, Inc.          *
 * All rights reserved.                               *
 *                                                    *
 ******************************************************

 Image size = 483.944 KBytes

 Maximum allowed size = 1023.75 KBytes


 Upgrading your FPGA image... DO NOT RESET the system
 unless instructed or upgrade of FPGA will fail !!!

 Beginning erase of 0x100000 bytes at offset 0x3d00000...  Done!

 Beginning write of fpga image  (0x78fb0 bytes at offset 0x3d00000)...

 This could take as little as 30 seconds or up to 2 minutes.
 Please DO NOT RESET!

 Success! FPGA image has been upgraded successfully.
 System will reset itself and reboot in about 15 seconds.
 0
```

```
**********************************************************
*                                                        *
* Welcome to Rom Monitor for WS-X4014 System.            *
* Copyright (c) 2002 by Cisco Systems, Inc.              *
* All rights reserved.                                   *
*                                                        *
**********************************************************

Rom Monitor Program Version 12.1(12r)EW

Board type 1, Board revision 5
Swamp FPGA revision 16, Dagobah FPGA revision 47


MAC Address  : 00-30-85-XX-XX-XX
IP Address   : 10.10.10.91
Netmask      : 255.255.255.0
Gateway      : 10.10.10.1
TftpServer   : Not set.
Main Memory  : 256 MBytes

***** The system will autoboot in 5 seconds *****


 Type control-C to prevent autobooting.
Switch#
```

Step 8 Use the **show version** command to verify that the new Cisco IOS release is operating on the switch.

Limitations and Restrictions

These sections list the limitations and restrictions for the current release of Cisco IOS software on the Catalyst 4500 series switch:

For Supervisor Engines II+Plus through V-10GE

- For IP Unnumbered, the following are not supported:
  - Dynamic routing protocols
  - HSRP/VRRP
  - Static arp
  - Unnumbered interface and Numbered interface in different VRFs
- For WCCP version 2, the following are not supported:
  - GRE encapsulation forwarding method
  - Hash bucket based assignment method
  - Redirection on an egress interface (redirection out)
  - Redirect-list ACL
- For IPX software routing, the following are not supported:
  - NHRP (Next Hop Resolution Protocol)

  - NLSP
  - Jumbo Frames
- For AppleTalk software routing, the following are not supported:
  - AURP
  - AppleTalk Control Protocol for PPP
  - Jumbo Frames
  - EIGRP
- For NFL, the following are not supported:
  - The following packets are not accounted for by the NetFlow Services card:

    Control packets

    Packets with link-level errors

    ARP, RARP
  - Software flow cache size is fixed
  - Distribution not based on IP packet size
- For PBR, the following are not supported:
  - Matching cannot be performed on packet lengths
  - IP precedence, TOS, and QoS group are fixed
  - ACL or route-map statistics cannot be updated
- IGRP not supported (use EIGRP, instead).
- The MAC address table will be cleared while switching between supervisor engines if either the 802.1s or 802.1w spanning tree protocol is configured. To minimize address clearing and subsequent packet flooding, configure the edge ports as 'spanning-tree portfast' and the link type as 'spanning-tree link-type point-to-point'.
- While running NSF and IS-IS IETF mode, if you issue the **issu runversion** command within 5 minutes of issuing the **issu loadversion** command, packet loss may occur during an ISSU upgrade,

  Workaround: Configure the NSF interval timer to 0 minutes, or delay issuing the **issu runversion** command until the NSF interval timer has expired and NSF has restarted.
- Routes may not properly be redistributed from one routing protocol to another when NSF is enabled on the switch. The success of the redistribution depends on the order in which the routing protocols converge after an NSF switchover.

  Workaround: None
- IP classful routing is not supported; do not use the **no ip classless** command; it will have no effect, as only classless routing is supported. The command **ip classless** is not supported as classless routing is enabled by default.
- The Catalyst 4510R switch does not support Supervisor Engines II-Plus, III, and IV. Installing an unsupported supervisor engine will result in unpredictable hardware behavior that cannot be handled by the software. Using an unsupported supervisor in a redundant slot may result in a supported supervisor in the other slot not working properly.
- Supervisor Engine II-Plus cannot read a CompactFlash card formatted by Supervisor Engine III or Supervisor Engine IV in a prior release.

- Catalyst 4500 supervisor engines will not be properly initialized if the VLAN configuration in the startup file does not match the information stored in the VLAN database file. This situation might occur if a backup configuration file was used.
- A Layer 2 LACP channel cannot be configured with the spanning tree PortFast feature.
- Netbooting using a boot loader image is not supported. See the "Troubleshooting" section on page 285 for details on alternatives.
- There is no support for downgrading to Release 12.1(8a)EW1 after running Release 12.1(13)EW (or higher). If you need to downgrade, contact your TAC representative for further instructions, and mention caveat CSCdz59058.
- Be aware of the following standard Cisco IOS software behavior when deploying redundant supervisors in a Catalyst 4507R: For hardware that does not exist while the startup configuration file is being parsed, the configuration file for the hardware is not applied.

  For example, if the active supervisor engine is in slot 1, and you have configured interface GE 1/1, the supervisor engine in slot 2 becomes active if you remove the active supervisor engine from the chassis. In addition, while the startup configuration file is being parsed, you will receive an error message indicating that interface GE1/1 is no longer present. This behavior is correct. When the formerly active supervisor engine is reinserted in slot 1, there is no configuration for interface Gig 1/1.

  This situation will not occur when both supervisor engines are physically in the chassis.

  Workaround: Copy the startup configuration file into the running configuration:

  ```
  Switch# copy startup-config running-config
  ```

- An unsupported default CLI for mobile IP is displayed in the HSRP configuration. Although this CLI will not harm your system, you might want to remove it to avoid confusion.

  Workaround: Display the configuration with the **show standby** command, then remove the CLI. Here is sample output of the **show standby GigabitEthernet1/1** command:

  ```
  switch(config)# interface g1/1
  switch(config)# no standby 0 name (0 is hsrp group number)
  ```

- For HSRP "preempt delay" to function consistently, you must use the **standby delay minimum** command. Be sure to set the delay to more than 1 hello interval, thereby ensuring that a hello is received before HSRP leaves the initiate state.

  Use the **standby delay reload** option if the router is rebooting after reloading the image.
- When you attempt to run OSPF between a Cisco router and a third party router, the two interfaces might get stuck in the Exstart/Exchange state. This problem occurs when the maximum transmission unit (MTU) settings for neighboring router interfaces do not match. If the router with the higher MTU sends a packet larger than the MTU set on the neighboring router, the neighboring router ignores the packet.

  Workaround: Since the problem is caused by mismatched MTUs, the solution is to change the MTU on either router to match the neighbor's MTU.
- You can run .1q-in-.1q packet pass-through with Supervisor Engine III and Supervisor Engine IV, but you can run only .1q-in-.1q encapsulation with a Supervisor Engine II+10GE, Supervisor Engine V, and Supervisor Engine V-10GE.
- For PVST and Catalyst 4500 series switch VLANs, Cisco IOS Release 12.1(13)EW and higher support a maximum of 3000 spanning tree port instances. If you want to use more than this number of instances, you should use MST rather than PVST.

- Only ports 1 and 2 on the WS-X4418-GB and ports 13 and 14 on the WS-X4412-2GB-T module can be set as ISL trunks.
- The Fast Ethernet port (10/100) on the supervisor module is active in ROMMON mode only.
- If an original packet is dropped due to transmit queue shaping and/or sharing configurations, a SPAN packet copy can still be transmitted on the SPAN port.
- For all software releases, do not use over 100,000 routes.
- All software releases support a maximum of 16,000 IGMP snooping group entries.
- For all software releases, the CLI contains some commands that are not supported. (CSCdw44274)
- Use the **no ip unreachables** command on all interfaces with ACLs configured for performance reasons.
- Layer 3 path load balancing metrics are not supported in Cisco IOS Releases 12.1(8a)EW, 12.1(11b)EW, 12.1(12c)EW, 12.1(13)EW, 12.1(19)EW, and 12.1(20)EW. (CSCdv10578)
- The threshold for the Dynamic Arp Inspection err-disable function is set to 15 ARP packets per second per interface. You should adjust this threshold depending on the network configuration. The CPU should not receive DHCP packets at a sustained rate greater than 1000 pps.
- A limited number of ACL bindings are dynamically installed by the IP source guard feature on a Catalyst 4500 series switch Supervisor Engine II-Plus. To take full advantage of the IP source guard feature, you should use the Catalyst 4500 series switch Supervisor Engine IV.
- If you first configure an IP address or IPv6 address on a Layer 3 port, then change the Layer 3 port to a Layer 2 port with the **switchport** command, and finally change it back to a Layer 3 port, the original IP/IPv6 address will be lost.
- By default, IPv6 is not enabled. To route IPv6, you must issue the **IPv6 unicast-routing** command. If you plan to use IPv6 multicast routing, use the **IPv6 multicast-routing** command.
- By default, CEF is not enabled for IPv6 (once IPv6 unicast routing is enabled). To prevent IPv6 traffic from being process-switched, use the **IPv6 cef** command.
- Multicast sources in community VLANs are not supported.
- Two-way community VLANs are not supported.
- Voice VLANs are not supported on community VLAN host interfaces.
- Private VLAN trunks do not carry community VLANs.
- When using private VLANs on the WS-4516 module, old ARP entries will not timeout of the ARP cache without manually clearing the entry. This event has no impact on production.
- Compact flash formatted in Release 12.2(20)EW should be re-formatted in Release 12.2(25)EW on both Supervisor Engine V-10GE and non-Supervisor V-10GE systems. Compact flash formatted on any other release need not be re-formatted on non-Supervisor Engine V-10GE systems.
- In a redundant system, do not remove and reinsert the standby supervisor while the active supervisor is booting up. Doing so may cause a failure in the online diagnostics test.

  Workaround: Remove and reinsert the standby supervisor after the active supervisor boots. (CSCsa66509)
- Slot 10 of the Supervisor Engine V accepts only the Catalyst 4500 series 2-port Gigabit Ethernet line card (WS-X4302-GB).
- The maximum number of unique private VLAN pairs supported by the **switchport private-vlan mapping trunk** command above is 500. For example, one thousand secondary VLANs could map to one primary VLAN, or one thousand secondary VLANs could map one to one to one thousand primary VLANs.

- Support for PoE depends on the use of line cards and power supplies that support PoE.

  PoE switching modules

  - WS-X4148-RJ45V
  - WS-X4224-RJ45V
  - WS-X4248-RJ45V
  - WS-X4248-RJ21V
  - WS-X4524-GB-RJ45V
  - WS-X4548-GB-RJ45V

  PoE enabled power supplies

  - 1300 W AC
  - 1400 W DC
  - 2800 W AC
- While configuring PVLAN promiscuous trunk ports, the maximum number of mappings is 500 primary VLANs to 500 secondary VLANs.
- 802.1X inaccessible authentication bypass feature is not supported with NAC LAN port IP feature.
- Changes to the console speed in "line console 0" configuration mode do not impact console speed in ROMMON mode. To apply the same console speed in ROMMON mode, use the "confreg" ROMMON utility and change ROMMON console speed.
- A CompactFlash module formatted on a Catalyst 4500 Supervisor Engine with Cisco IOS software prior to Cisco IOS Release 12.1(19)EW or a Cisco IOS 12.1 release does not work on a Supervisor Engine II-Plus.
- If a Catalyst 4500 series switch requests information from the Cisco Secure Access Control Server (ACS) and the message exchange times out because the server does not respond, a message similar to this appears:

  ```
  00:02:57: %RADIUS-4-RADIUS_DEAD: RADIUS server 172.20.246.206:1645,1646 is not
  responding.
  ```

  If this message appears, check that there is network connectivity between the switch and the ACS. You should also check that the switch has been properly configured as an AAA client on the ACS.
- The **bgp shutdown** command is not supported in BGP router configuration mode. Executing this command might produce unexpected results.
- A spurious error message appears when an SSH connection disconnects after an idle timeout.

  Workaround: Disable idle timeouts. (CSCec30214)
- Interfaces on the module WS-X4148-RJ45V may not establish a link with a Daiden DN-2800G media converter, when both the switch and the media converter interfaces are configured to operate at 100 Mbps and full duplex. This situation occurs when the interface on the module is configured to automatically detect and power up devices inline with the **power inline auto** command. This caveat is exhibited in all software releases.

  Workarounds:

  1. Disable inline power on the switch ports using the **power inline never** command.

  2. Configure the media converter to autonegotiate the speed and duplex instead of running at 100 Mbps and full duplex. (CSCee62109)

- IPSG for Static Hosts basically supports the same port mode as IPSG except that it does not support trunk port:
  - It supports Layer 2 access port and PVLAN host port (isolated or community port).
  - It does not support trunk port, Layer 3 port or EtherChannel.
- IPSG for Static Hosts should not be used on uplink ports.
- Selective DBL is only supported for non-tagged or single-tagged IP packets. To achieve Selective DBL-like functionality with a non-IP packet (like Q-in-Q and IPX), apply an input policy map that matches COS values and specifies DBL in the class map.
- For Selective DBL, if the topology involves Layer 2 Q in Q tunneling, the match cos policy map will apply to the incoming port.
- If a set of DSCP values are already configured (e.g. 0-30, 0-63), specifying a subset of these DSCP values with the **qos dbl dscp-based 0-7** command will not remove the unwanted DSCP values of 8 through 63. Rather, you must use the **no** form of the command to remove the extraneous values. In this case, the **no qos dbl dscp-based 8-63** command will leave 0-7 selected.
- If policing is performed on an input policy for a flow, the dbl used in output policies for that flow is ignored. (CSCsh60214)
- When using Port Security with Multi Domain Authentication (MDA) on an interface:
  - You must allow for at least 3 MAC addresses to access the switch: 2 for the phone (the MAC address of a phone gets registered to the Data domain and Voice domain), and one for the PC.
  - The data and voice VLAN IDs must differ.
- For IP Port Security (IPSG) for static hosts, the following apply:
  - As IPSG learns the static hosts on each interface, the switch CPU may hit 100 per cent if there are a large number of hosts to learn. The CPU usage will drop once the hosts are learned.
  - IPSG violations for static hosts are printed as they occur. If multiple violations occur simultaneously on different interfaces, the CLI displays the last violation. For example, if IPSG is configured for 10 ports and violations exist on ports 3,6 and 9, the violation messages are printed only for port 9.
  - Inactive host bindings will appear in the device tracking table when either a VLAN is associated with another port or a port is removed from a VLAN. So, as hosts are moved across subnets, the hosts are displayed in the device tracking table as INACTIVE.
  - Autostate SVI does not work on EtherChannel.
- After the fix for CSCsg08775, a GARP ACL entry is no longer part of the Static CAM area, but there is still a system-defined GARP class in Control Plane Policing (CPP). CPP is a macro with many CLIs and the GARP class creation CLI has been removed.
- As of Cisco IOS Release 12.2(31)SGA1, the GARP class is no longer part of the CoPP. (Due to the fix associated with CSCsg08775, even though the system-cpp-garp-range entry still appears in the CPP configuration, it is merely idling and will be removed in future releases.) Henceforward, you can manipulate GARP traffic with user ACLs and QoS. If you want to protect CPU against GARP packets, you also can "police down" GARP packets using CoPP after you define the user class for the GARP packet. (This is now possible because GARP is no longer part of the Static CAM area.)

  Due to tight integration of CPP implementation between IOS and platform code, an error message will always appear during boot-up and CPP will not be applied when downgrading IOS software from a version where this caveat is integrated to a previous release (where this fix is not present):

  ```
  %Invalid control plane policy-map; Please unconfigure policy-map attached to
  control-plane, and associated class-maps, and execute config command "macro global
  apply system-cpp" error: failed to install policy map system-cpp-policy
  ```

As a workaround do the following:

1. Back-up your configuration when performing software downgrading.

2. Remove all CPP entries manually from the config and then re-appy the **macro global apply system-cpp** command.

There should be no problem associated with this caveat while upgrading between releases (CSCsh45714).

- Certain configurations on the Cat4507R and Cat4510R chassis exceeds the maximum amount of data power available. These configurations include the combination of the follow PIDs:
  - 7 Slot configuration:
  - chassis: WS-C4507R-E, WS-C4510R-E
  - Dual supervisors: WS-X45-Sup6-E
  - one or more: WS-X4448-GB-RJ45 or WS-X4148-FX-MT

  To maximize the 10/100/1000 port density of 7 and 10 slot chassis when using redundant Supervisor engine 6-E install WS-X4548-GB-RJ45 line cards instead of WS-X4448-GB-RJ45 line cards. If WS-X4448-GB-RJ45 line cards are required two options are available.

  Option 1

  Only 4 linecard slots can be used on the Cat4507R and 6 line card slots on the Cat4510R chassis.

  Option 2

  When all slots are required only one WS-X4448-GB-RJ45 line card can be used.

  To maximize the 100-BASE-FX port density of 7 and 10 slot chassis when using Supervisor engine 6-E install WS-4248-FE-SFP line cards with FX optics instead of WS-X4148-FX-MT line cards. If WS-X4148-FX-MT line cards are required two options are available.

  Option 1

  Only 4 linecard slots can be used on the Cat4507R and 6 line card slots on the Cat4510R chassis.

  Option 2

  When all slots are required only one WS-X4448-GB-RJ45 line card can be used.

- When ipv6 is enabled on an interface via any CLI, it is possible to see the following message:

  ```
  % Hardware MTU table exhausted
  ```

  In such a scenario, the ipv6 MTU value programmed in hardware will be different from the ipv6 interface MTU value. This will happen if there is no room in the hw MTU table to store additional values.

  You must free up some space in the table by unconfiguring some unused MTU values and subsequently disable/re-enable ipv6 on the interface or reapply the MTU configuration.

- To stop IPSG with Static Hosts on an interface, use the following commands in interface configuration submode:

  ```
  Switch(config-if)# no ip verify source
  Switch(config-if)# no ip device tracking max"
  ```

  To enable IPSG with Static Hosts on a port, issue the following commands:

  ```
  Switch(config)# ip device tracking ****enable IP device tracking globally
  Switch(config)# ip device tracking max <n> ***set an IP device tracking maximum on int
  ```

```
Switch(config-if)# ip verify source tracking [port-security] ****activate IPSG on port
```

Caution If you only configure the **ip verify source tracking [port-security]** interface configuration command on a port without enabling IP device tracking globally or setting an IP device tracking maximum on that interface, IPSG with Static Hosts will reject all the IP traffic from that interface.

Note The issue above also applies to IPSG with Static Hosts on a PVLAN Host port.

- You must disable hardware control plane policing by removing **system-cpp-policy** from the control-plane before ISSU is performed between Cisco IOS Release 12.2(40)SG and a previous release. You cannot detach system-cpp-policy from the control-plane in previous releases. So, if you are running a previous release, you must first upgrade to the latest Carlos maintenance release (12.2(31) SGA4) doing an ISSU upgrade to release 12.2(40)SG).
- On a Supervisor Engine V-10GE (WS-X4516-10GE) in a 10 slot chassis (Catalyst 4510R and 4510RE), if a startup configuration with a new uplink mode is copied into flash memory and the system is power cycled, the system will not come up with the new uplink mode. After copying the startup configuration with the new uplink mode into flash memory, the uplink mode must be changed to the new uplink mode through the command interface before the system is power cycled. This ensures that the system comes up in the new uplink mode.
- When the Supervisor Engine V is used in the Catalyst 4510R or 4510R-E chassis, slot 10 (FlexSlot) will only support the following linecards: the 2-port GBIC (WS-X4302-GB) and the Access Gateway Module (WS-X4604-GWY). Supervisor Engine V-10GE has this same restriction when its uplink select mode is configured to "all." Supervisor Engine V-10GE supports all Catalyst 4500 Series linecards in slot 10 when its uplink select mode is configured to "tengigabitethernet" or "gigabitethernet." Supervisor Engine 6-E supports all Catalyst 4500 Series linecards in slot 10.

For Supervisor Engine 6-E

- The MAC address table will be cleared while switching between supervisor engines if either the 802.1s or 802.1w spanning tree protocol is configured. To minimize address clearing and subsequent packet flooding, configure the edge ports as 'spanning-tree portfast' and the link type as 'spanning-tree link-type point-to-point'.
- IP classful routing is not supported; do not use the **no ip classless** command; it will have no effect, as only classless routing is supported. The command **ip classless** is not supported as classless routing is enabled by default.
- A Layer 2 LACP channel cannot be configured with the spanning tree PortFast feature.
- Netbooting using a boot loader image is not supported. See the "Troubleshooting" section on page 285 for details on alternatives.
- Be aware of the following standard Cisco IOS software behavior when deploying redundant supervisors in a Catalyst 4507R: For hardware that does not exist while the startup configuration file is being parsed, the configuration file for the hardware is not applied.

  For example, if the active supervisor engine is in slot 1, and you have configured interface GE 1/1, the supervisor engine in slot 2 becomes active if you remove the active supervisor engine from the chassis. In addition, while the startup configuration file is being parsed, you will receive an error

message indicating that interface GE1/1 is no longer present. This behavior is correct. When the formerly active supervisor engine is reinserted in slot 1, there is no configuration for interface Gig 1/1.

This situation will not occur when both supervisor engines are physically in the chassis.

Workaround: Copy the startup configuration file into the running configuration:

```
Switch# copy startup-config running-config
```

- An unsupported default CLI for mobile IP is displayed in the HSRP configuration. Although this CLI will not harm your system, you might want to remove it to avoid confusion.

  Workaround: Display the configuration with the **show standby** command, then remove the CLI. Here is sample output of the **show standby GigabitEthernet1/1** command:

  ```
  switch(config)# interface g1/1
  switch(config)# no standby 0 name (0 is hsrp group number)
  ```

- For HSRP “preempt delay” to function consistently, you must use the **standby delay minimum** command. Be sure to set the delay to more than 1 hello interval, thereby ensuring that a hello is received before HSRP leaves the initiate state.

  Use the **standby delay reload** option if the router is rebooting after reloading the image.

- When you attempt to run OSPF between a Cisco router and a third party router, the two interfaces might get stuck in the Exstart/Exchange state. This problem occurs when the maximum transmission unit (MTU) settings for neighboring router interfaces do not match. If the router with the higher MTU sends a packet larger than the MTU set on the neighboring router, the neighboring router ignores the packet.

  Workaround: Since the problem is caused by mismatched MTUs, the solution is to change the MTU on either router to match the neighbor’s MTU.

- You can run only .1q-in-.1q packet pass-through with Supervisor Engine 6-E.
- For PVST and Catalyst 4500 E-Series switch VLANs, Cisco IOS Release 12.1(13)EW and higher support a maximum of 3000 spanning tree port instances. If you want to use more than this number of instances, you should use MST rather than PVST.
- Because the Supervisor Engine 6-E supports the FAT filesystem, the following restrictions apply:
  - The **verify** and **squeeze** commands are not supported.
  - The **rename** command is supported in FAT file system.

    For Supervisor Engine 6-E, the **rename** command has been added for bootflash and slot0. For all other supervisor engines, the **rename** command is supported for nvram devices only.
  - the **fsck** command is supported for slot0 device. It is not supported in the file systems on supervisor engines other than 6-E.
  - In the FAT file system, the IOS **format bootflash:** command erases user files only. It does not erase system configuration.
  - The FAT file system supports a maximum of 63 characters for file/directory name. The maximum for path length is 127 characters.
  - The FAT file system does not support the following characters in file/directory names:{}#%^ and space characters.
  - The FAT file system honors the Microsoft Windows file attribute of "read-only" and "read-write", but it does not support the Windows file "hidden" attribute.

  - Supervisor Engine 6-E uses the FAT file system for compact flash (slot0). If a compact flash is not formatted in FAT file system (such as compact flash on a supervisor engine other than 6-E), the switch does not recognize it.

- The Fast Ethernet port (10/100) on the supervisor module is active in ROMMON mode only.
- If an original packet is dropped due to transmit queue shaping and/or sharing configurations, a SPAN packet copy can still be transmitted on the SPAN port.
- All software releases support a maximum of 16,000 IGMP snooping group entries.
- For all software releases, the CLI contains some commands that are not supported. (CSCdw44274)
- Use the **no ip unreachables** command on all interfaces with ACLs configured for performance reasons.
- The threshold for the Dynamic Arp Inspection err-disable function is set to 15 ARP packets per second per interface. You should adjust this threshold depending on the network configuration. The CPU should not receive DHCP packets at a sustained rate greater than 1000 pps.
- If you first configure an IP address or IPv6 address on a Layer 3 port, then change the Layer 3 port to a Layer 2 port with the **switchport** command, and finally change it back to a Layer 3 port, the original IP/IPv6 address will be lost.
- In a redundant system, do not remove and reinsert the standby supervisor while the active supervisor is booting up. Doing so may cause a failure in the online diagnostics test.

  Workaround: Remove and reinsert the standby supervisor after the active supervisor boots. (CSCsa66509)
- The maximum number of unique private VLAN pairs supported by the **switchport private-vlan mapping trunk** command above is 500. For example, one thousand secondary VLANs could map to one primary VLAN, or one thousand secondary VLANs could map one to one to one thousand primary VLANs.
- Support for PoE depends on the use of line cards and power supplies that support PoE.

  PoE switching modules
  - WS-X4148-RJ45V
  - WS-X4224-RJ45V
  - WS-X4248-RJ45V
  - WS-X4248-RJ21V
  - WS-X4524-GB-RJ45V
  - WS-X4548-GB-RJ45V
  - WS-X4648RJ45-E
  - WW-X4649RJ45+E

  PoE enabled power supplies
  - 1300 W AC
  - 1400 W DC
  - 2800 W AC
- If a Catalyst 4500 series switch requests information from the Cisco Secure Access Control Server (ACS) and the message exchange times out because the server does not respond, a message similar to this appears:

```
00:02:57: %RADIUS-4-RADIUS_DEAD: RADIUS server 172.20.246.206:1645,1646 is not
responding.
```

If this message appears, check that there is network connectivity between the switch and the ACS. You should also check that the switch has been properly configured as an AAA client on the ACS.

- For IP Port Security (IPSG) for static hosts, the following apply:
  - As IPSG learns the static hosts on each interface, the switch CPU may hit 100 per cent if there are a large number of hosts to learn. The CPU usage will drop once the hosts are learned.
  - IPSG violations for static hosts are printed as they occur. If multiple violations occur simultaneously on different interfaces, the CLI displays the last violation. For example, if IPSG is configured for 10 ports and violations exist on ports 3,6 and 9, the violation messages are printed only for port 9.
  - Inactive host bindings will appear in the device tracking table when either a VLAN is associated with another port or a port is removed from a VLAN. So, as hosts are moved across subnets, the hosts are displayed in the device tracking table as INACTIVE.
  - Autostate SVI does not work on EtherChannel.
- When ipv6 is enabled on an interface via any CLI, it is possible to see the following message:

  ```
  % Hardware MTU table exhausted
  ```

  In such a scenario, the ipv6 MTU value programmed in hardware will be different from the ipv6 interface MTU value. This will happen if there is no room in the hw MTU table to store additional values.

  You must free up some space in the table by unconfiguring some unused MTU values and subsequently disable/re-enable ipv6 on the interface or reapply the MTU configuration.
- To stop IPSG with Static Hosts on an interface, use the following commands in interface configuration submode:

  ```
  Switch(config-if)# no ip verify source
  Switch(config-if)# no ip device tracking max"
  ```

  To enable IPSG with Static Hosts on a port, issue the following commands:

  ```
  Switch(config)# ip device tracking ****enable IP device tracking globally
  Switch(config)# ip device tracking max <n> ***set an IP device tracking maximum on int
  Switch(config-if)# ip verify source tracking [port-security] ****activate IPSG on port
  ```

Caution If you only configure the **ip verify source tracking [port-security]** interface configuration command on a port without enabling IP device tracking globally or setting an IP device tracking maximum on that interface, IPSG with Static Hosts will reject all the IP traffic from that interface.

Note The issue above also applies to IPSG with Static Hosts on a PVLAN Host port.

- uRPF supports up to 4 maximum paths. If a packet comes to one of the valid VLANs that is not programmed as one of the RPF VLAN in hardware, it will be dropped. Traffic may come from any other interfaces without RPF configured and it can be switched.
- Input and output ACL cannot override/filter traffic received on an uRPF interface.
- No CLI exists to reflect uRPF drop packets during hardware switching. The **sh ip traffic** and **show cef int** commands do not reflect uRPF drops.

- IPv6 ACL is not supported on a switchport. IPv6 packets cannot be filtered on switchports using any of the known methods (PACL, VACL, or MACLs).
- Class-map match statements using **match ip prec | dscp** match only IPv4 packets whereas matches performed with **match prec | dscp** match both IPv4 and IPv6 packets.
- IPv6 QoS hardware switching is disabled if the policy-map contains IPv6 ACL and match cos in the same class-map with the ipv6 access-list has any mask range between /81 and /127. It results in forwarding packets to software which efficiently disable the QoS.
- When the following data-only Catalyst 4500 linecards are used in a Catalyst 4507R-E or 4510R-E chassis with Supervisor Engine 6-E's, the capacity of the power supply may be exceeded:
  - WS-X4148-FX-MT Cisco Catalyst 4500 Fast Ethernet Switching Module, 48-port 100BASE-FX (MT-RJ)
  - WS-X4448-GB-RJ45 Cisco Catalyst 4500 48-port 10/100/1000 Module (RJ-45)

  The Catalyst 4503-E and Catalyst 4506-E have no caveats. The Catalyst 4507R-E configurations when using power supplies rated at 1400W or above also have no caveats.

  The following replacement switching modules will not exceed the power supply capacity for all Catalyst 4500-E chassis:

	Recommnded Replacement	Description
WS-X4148-FX-MT	WS-X4248-FE-SFP	Fast Ethernet, 48-port 100BASE-X (SFP)
WS-X4448-GB-RJ45	WS-X4548-GB-RJ45	Enhanced 48-port 10/100/1000 Module (RJ-45)
WS-X4448-GB-RJ45	WS-X4648-RJ45V-E	E-Series 48-port 802.3af PoE 10/100/1000 (RJ-45)

  Refer to the *Catalyst 4500 Series Module Installation Guide* to determine the power requirements for all of the Catalyst 4500 linecards and the power capacities of the Catalyst 4500 power supplies.
- Supervisor Engine 6-E *only* supports Catalyst 4500 Series linecards in slots 8-10.

Caveats

Caveats describe unexpected behavior in Cisco IOS releases. Caveats listed as open in a prior release are carried forward to the next release as either open or resolved.

Note All caveats in Release 12.4 also apply to the corresponding 12.1 E releases. Refer to the *Caveats for Cisco IOS Release 12.4* publication at the following URL: http://www.cisco.com/univercd/cc/td/doc/product/software/ios124/124relnt/124cavs/124mcavs.htm

Note For the latest information on PSIRTS, refer to the Security Advisories on CCO at the following URL: http://www.cisco.com/en/US/products/products_security_advisories_listing.html

Open Caveats in Cisco IOS Release 12.2(40)SG

This section lists the open caveats in Cisco IOS Release 12.2(40)SG:

- When you enter the **access-list N permit host hostname** command on a redundant chassis operating in SSO mode, you might observe the following syslog messages. The command is not synchronized with the redundant supervisor engine, and keepalive warnings appear.

```
000099: Jul  9 01:22:36.478 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000100: Jul  9 01:22:46.534 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000101: Jul  9 01:22:56.566 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000102: Jul  9 01:23:06.598 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000103: Jul  9 01:23:16.642 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000104: Jul  9 01:23:26.682 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000105: Jul  9 01:23:36.721 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000106: Jul  9 01:23:46.777 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000107: Jul  9 01:23:56.793 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
```

  Workaround: When using the **access-list N permit host hostname** command, specify the IP address of the host rather than the hostname (CSCef67489)

- In rare instances, when you are using MAC ACL-based policers, the packet match counters in **show policy-map interface fa6/1** do not show the packets being matched:

```
clearwater# show policy-map int
  FastEthernet3/2

   Service-policy output: p1

     Class-map: c1 (match-all)
       0 packets<--------It stays at '0' despite of traffic being received
       Match: access-group name fnacl21
       police: Per-interface
         Conform: 9426560 bytes Exceed: 16573440 bytes
```

  Workaround: Verify that the MAC addresses being transmitted through the system are learned.

  (CSCef01798)

- After an SSO switchover, you may receive a “PM-4-PORT_INCONSISTENT” error message on the switch console if you enter the **shutdown** command, then the **no shutdown** command on the port that is in UDLD error-disable state. This does not impact the switch; the port remains in UDLD error-disable state. Re-entering the **shutdown** command, then the **no shutdown** command on the same port will ensure that the error message does not re-appear.

  Workaround: None. (CSCeg48586)

- When you issue the **ip http secure-server** command (or if the system reads it from the startup configuration), the device will check for the existence of a persistent self-signed certificate during boot up.
  - If such a certificate does not exist and the device's hostname and default_domain have been set, then a persistent self-signed certificate will be generated.
  - If such a certificate exists, the FQDN in the certificate is compared with the current device's hostname and default_domain. If either of these differs from the FQDN in the certificate, then the existing persistent self-signed certificate is replaced with a new one with the updated FQDN. Be aware that the existing keypair is used in the new certificate.

  On a switch that support redundancy, the generation of the self-signed certificate is performed independently on the active and the standby supervisor engines. So, the certificates differ. After switchover, the HTTP client that holds the old certificate can not connect to the HTTPS server.

  Workaround: Re-connect. (CSCsb11964)
- After upgrading to Cisco IOS 12.2(31)SG and later releases, some CPU queues configured as SPAN sources and saved in the startup configuration file do not function as they did in the older software release.

  This only impacts a switch that has any of the following queues are configured as SPAN source in releases prior to 12.2(31)SG and saved to startup-config. The SPAN destination would not get the same traffic after upgrading to 12.2(31)SG.

QueueID	Old QueueName	New QueueName
5	control-packet	control-packet
6	rpf-failure	control-packet
7	adj-same-if	control-packet
8	<unused queue>	control-packet
11	<unused queue>	adj-same-if
13	acl input log	rfp-failure
14	acl input forward	acl input log

  Workaround: After upgrading to 12.2(31)SG and later releases, remove the old SPAN source configuration and reconfigure with the new queue names/IDs. For example:

```
Switch(config)# no monitor session n source cpu queue all rx
Switch(config)# monitor session n source cpu queue <new_Queue_Name>
```

  (CSCsc94802)
- To enable IP CEF if it is disabled by hardware exhaustion, use the **ip cef distributed** command.

  Workaround: None. (CSCsc11726)
- An IP redirect may not be sent out if the outgoing interface on a Catalyst 4500 series switch is an IP unnumbered port.

  This could occur for these reasons:
  - A packet requires an IP redirect to an IP unnumbered outgoing port within 3 minutes of booting the Catalyst 4500 series switch.

  - This is also seen if the switch administrator issues the **shutdown** and **no shutdown** commands on an outgoing interface that has IP unnumbered enabled. The switch receives packets that require redirection and the destination MAC address is already in ARP table.

  Workarounds:

  - Do not inject packets that require IP redirect sent out to an IP unnumbered port within 3 minutes of booting the Catalyst 4500 series switch.
  - Configure the correct default gateway on the host side. (CSCse75660)

- After configuring the **bgp dampening route-map bgp_damp** command on an active supervisor engine in SSO mode, the following system logs are seen on the console of the standby supervisor engine:

  ```
  00:10:34: %BGP-5-DAMPENING_HIGH_MAX_PENALTY: Maximum penalty (32473) is more than
  allowed maximum (20000). Dampening is OFF

  00:10:06: %BGP-5-DAMPENING_HIGH_MAX_PENALTY: Maximum penalty (32473) is more than
  allowed maximum 000). Dampening is OFF
  ```

  At this point, if you revert back to the **bgp dampening** command on the active supervisor engine, the new command is not synchronized with the standby supervisor engine.

  Workarounds: Issue the **no bgp dampening** command, then the **bgp dampening** command. (CSCse12485)

- When policing IEEE 802.1Q tagged non-IP traffic and calculating traffic conformance, the policer excludes the four bytes that constitute the 802.1Q tag even when you configure **qos account layer2 encapsulation**.

  Workaround: None. (CSCsg58526)

- When hardcoded duplex and speed settings are deleted after an interface shuts down, an "a-" is added to the duplex and speed in the output from the **show interface status** command.

  This does not impact performance.

  Workaround: Issue the **no shutdown** command. (CSCsg27395)

- If the ACL of an SVI interface is too large for the TCAM, ARP replies for the associated VLAN may not be processed.

  Workaround: Upgrade to Cisco IOS Release 12.2(31)SG or later and resize the TCAM with the **access-list hardware region balance** command to support the ACL Verify TCAM utilization with the **show platform hardware acl statistics utilization brief** command. (CSCse50565)

- When a transceiver is removed rapidly from one port and placed in another on the same chassis, occasionally a duplicate seeprom message is displayed and the port is not able to handle traffic.

  Workaround: Remove the transceiver from the new port and place it in the old port. Once the SFP is recognized in the old port, remove it slowly and insert it in the new port. (CSCse34693).

- The following error message is seen during an ISSU upgrade from Cisco IOS Release 12.2(31)SGA or 12.2(31)SGA1 to Cisco IOS Release 12.2(37)SG or later images:

  ```
  %CHKPT-4-INVALID: Invalid checkpoint client ID (189)
  ```

  Workaround: None. This message is an informational message. (CSCsi60913)

- When performing an ISSU upgrade and the versions of the active and standby supervisor engines differ, the following message is seen in the standby supervisor engine console:

  ```
  %XDR-6-XDRINVALIDHDR: XDR for client (CEF push) dropped (slots:2 from slot:3
  context:145 length:11) due to: invalid context
  ```

Workaround: None. This is an informational message. (CSCsi60898)

- If you attempt to downgrade to Cisco IOS Release 12.2(37)SG from Release 12.2(37)SG1 and if the process is started with active supervisor engine in slot-2, the downgrade fails at 'runversion.'

  Workaround: None. (CSCsj83688)

- If an Cisco IP Phone has an supplicant attached, upon reloading a DUT port configured with MDA and attached to phones and supplicants, the port will not pass traffic. Phone will in an unknown state.

  Problem is not observed if the phone is a stand alone device.

  Workarounds: Powercycle the Cisco IP phone. (CSCsk81297)

Supervisor Engine 6-E Specific

- Software qos does not match a .1Q packet properly for applying the desired qos actions.

  Workarounds: None.

  The support to handle .1Q packets for software QoS lookup unavailable in the Cisco IOS Release 12.2(40)SG release. (CSCsk66449)

- When a service-policy is removed from a physical port that is member of an ether channel, a LACP or PAGP protocol-based ether channel goes down. The port-channel members get bundled back in but remain in *suspended* state due to failure to exchange the protocol packets with the other end.

  Workarounds: Before removing the service policy from a ether channel member, remove it from the channel. Then, return it to the channel. (CSCsk70568)

- When using *bandwidth percentage* actions in a queuing policy-map, the actual bandwidth share differs from that of the configured policy-map.

  In a queuing QoS policy, there can be zero or more queuing classes that have an explicit, user specified, bandwidth share specified. There can be zero or more queuing classes that do not have such user specified bandwidth share. The system takes the unallocated bandwidth share and allocates it equally among the latter set of classes.

  When using percentage-based bandwidth allocation, if the share comes to less than 1%, the queues corresponding to those classes do not get updated in hardware with the new bandwidth share. These queues get more than the expected share of bandwidth.

  Workarounds: Ensure that the unallocated bandwidth percentage is at least equal to the number of queues that do not have the explicit **bandwidth percentage** command. This should include the default as well as priority queues. (CSCsk77757)

- Not all combinations of features can be simultaneously supported by the hardware. When such a feature combination is configured, packets will be processed in software and a log message indicating this will be generated:

  ```
  %C4K_HWACLMAN-4-ACLHWLABELERR: Path (in :50, 1006) label allocation failure:
  SignatureInconsistent - packets will be handled in software, QoS is disabled.
  ```

  One feature combination that can trigger this problem is the attempt to combine a QoS policy that matches on cos bits with IPv6 ACL configuration that matches on IPv6 source addresses that partially mask in the lower 48 bits of the address. (IPv6 subnets in the /81 to /127 range will also trigger this behavior if IPv6 multicast routing is enabled.)

  Workaround: Do not configure feature combinations that conflict. Currently the above conflict between QoS policies matching on COS bits and IPv6 configuration with partial masking of the lower 48 bits of the source address is the only known conflicting feature combination. If matching on COS bits is required by the QoS policy, architect the IPv6 network using /80 subnets or larger. (CSCsk79791)

- When policer or shape or shape values are specified in terms of percentage of link bandwidth on a policy and the interface on which it is attached is forced to a specific speed with the **speed** *10/100/1000* command, the applied policer or shape or shape value might correspond to the new forced speed.

  Service policy has to be configured with percentage police or shape or share values and the link speed is forced to a specific values. For example

```
Policy-map p1
    class-map c1
       police rate percent 10
```

  Workaround: Either use the **speed auto** *10/100/1000* command or the absolute policer, shape or shape values rather than percentage values. For example,

```
Policy-map p1
   class-map c1
     police rate 10 mbps
```

  (CSCsk56877

- The **ip icmp unreachable** command may impact ICMP unreachable generation for both IPv4 and IPv6 packets received on the Layer 3 interface. Furthermore, a Layer 3 deny ACL on a Layer 3 interface with an IPv6 address may not copy the denied traffic to the CPU, bypassing ICMP unreachable generation.

  The first problem occurs on a dual Layer 3 interface where both IPv4 and IPv6 address are configured. The second problem occurs when all Layer 3 interfaces in a switch are configured with IPv6 address only.

  Workarounds: Avoid using a dual Layer 3 interface with both IPv6 and IPv4 address configured.

  Avoid using a switch as a purely IPv6 Layer 3 interface-only router. Ensure that it has at least one Layer 3 interface per SVI with IPv4 address configured. (CSCsk77234)

- When you toggles an interface configuration from Layer 3/router port to Layer 2/switch port, and back to Layer 3/router port, an IPv6 ACL attached on the original router interface may not get flushed properly in the TCAM hardware even though the router interface's IOS configuration is unconfigured.

  Workaround: Before switching a Layer 3 interface from a router port to a switch port, unconfigure the IPv6 ACL on the router interface. This will ensure that the IPv6 ACL is cleaned up properly both in the IOS running configuration as well as in the TCAM hardware. (CSCsk60775)

- Under some conditions, one or more flows continue to be dropped because of DBL even after DBL has been removed from the service-policy.

  When an output service-policy is attached to an interface and if the policy is configured to apply DBL on a queue, the flows that are enqueued to the queue are subjected to the DBL algorithm. If one or more flows are classified as *belligerent* (flows do not back-off in response to drops because of congestion in the queue), those flows continue to be classified as belligerent even when DBL is disabled on that queue.

  For this condition to persist, the transmit queues in question must remain congested for a long period of time and that congestion must be caused by flows that remain belligerent.

  Workaround: Provided the queue in question is non-default (queuing actions are not configured in the class-default class of the policy-map), detach and re-attach the service-policy.

  If this happens on the default queue, modifying and resetting some queuing parameters like bandwidth/shape fixes the issue. (CSCsk62457

- When an E-series switch encounters either a fan tray failure or a supervisor critical temperature, the chassis shuts off. The output of the **show crashdump** command will *not* indicate the cause of the power-down.

  Workarounds: Use the **show log** command to determine the cause of the power-down.

  – If the log has *LogGalInsufficientFansDetected* messages, the cause was a fan-tray failure.

  – If the log has *LogRkiosModuleShutdownTemp* messages, the cause was that the supervisor critical temperature exceeded the failure threshold.

  (CSCsk48632)

- The LEDs on E-series supervisor and line cards remain green even when the module reports a critical or shutdown temperature alarm. The LEDs should turn orange or red.

  This occurs on all E-series line cards that report critical or shutdown temperature alarms. The actual temperatures and the alarm states are visible in the output of **show environment temperature** command.

  Workarounds: None for LED colors. However, when an alarm is raised or cleared, console log messages and SNMP traps are issued. Also, the current status of any temperature alarms are visible in the output of the **show environment temperature** command. (CSCsk57143)

- If a queuing policy-map is detached and attached in quick succession, few packets of non-default class of traffic are dropped.

  In this scenario, until the hardware is programmed with a new configuration (**Detach -> Attach**), non-default queues are inactive. So, until these queues are activated, traffic matching these non-default queues is dropped.

  Workarounds: None. (CSCsk85379)

- When a service policy on a port-channel member port is modified, traffic may be dropped for some of the classes.

  Workaround: Do the following:

a. Un-configure the interface(s) on which this policy-map is attached from the portchannel.

b. Modify the policy-map.

c. Configure the interface(s) in the portchannel.

(CSCsk77119)

- When two switches are connected back-to-back via two or more links and when a packet is locally-originated, the source IP address may not correspond to the IP address of the outgoing interface. A switch receiving such a packet with unicast RPF feature enabled might drop the incoming packet.

  Workaround: None. (CSCsh99124)

- A Catalyst 4500 series switch with Supervisor Engine 6-E will support a maximum of 32 MTU values system wide.

  On a switch running Cisco IOS Release 12.2(40)SG, all MTU values configured on a line card are set to default when the module is reset. Furthermore, MTU values are not retained for modules that are physically moved.

  Workaround: None. (CSCsk52542)

- When a non-default duplex setting is applied to a FastEthernet interface and you upgrade from Cisco IOS Release 12.2(31)SGA to 12.2(40)SG, the duplex settings on FastEthernet settings are lost. The interface reverts to its default duplex setting, and the duplex setting no longer appears in the output of the **show running** command.

  Workaround: If non-default duplex settings are in the running config, note them prior to upgrading, and reapply them after the upgrade completes. (CSCsk83670)

- On rare occasions, if you use an X2 SR transceiver on a WS-X4706-10GE running Cisco IOS Release 12.2(40)SG, you will observe CRC errors after a reload or power cycle when you insert the card or the X2.

  Workaround: Reinsert the X2. (CSCsk43618)

- Control plane policing applied to DHCP traffic as identified by the system class-maps system-cpp-dhcp-cs, system-cpp-dhcp-sc, and system-cpp-dhcp-ss may not be effective.

  Workaround: None. CSCsk67395)

- In policy map, if a queuing class with the **bandwidth remaining percent <>** command sits before a priority queuing class configuration, the **bandwidth remaining percent <>** command action is applied on reload.

  Workaround: Re-apply the policy-map. (CSCsk75793

- A hierarchical policy-map can end up having queuing actions at both the parent and child policy-map level. This can happen when the parent class-map already has queuing actions and the child policy-map is modified to have queuing actions.

  If such a policy-map is attached to an interface, there will be more than the expected number of queues that will be created.

  Workaround: If a hierarchical policy-map is incorrectly configured to have queueing actions at two levels, change either the parent or child policy-map to not have any queuing actions. (CSCsk82028)

- When the CPU transmits .1X packet on an interface that has an egress qos policy attached, the packet is not matched and exits without any QoS marking actions.

  When a packet is sent to the CPU it may get sent out on some other interface. If so, the original COS value for a .1X packet cannot be matched by software QoS (as per CSCsk66449). The packet is transmitted with whatever COS value it was generated with (7, for the MLDv1 packets described here).

  Workaround: None.

  Part of the root cause of this problem is captured through CSCsk66449, which indicates that the software QoS cannot match against a .1X packet. (CSCsk72544)

- When the trusted boundary feature is enabled on an interface, there is no command to check the current operating state.

  Workaround: None. You cannot explicitly check the trusted boundary state. However, you can indirectly determine this state:

  The trusted boundary feature ensures whether the packet's COS/DSCP value will b e trusted or not. When the interface is not in a trusted state, the COS/DSCP fields are forced to zero on a received packet.

  A QoS policy exists on that interface that uses that COS/DSCP value for classification. Therefore, if the packet classification is based on the packet value, you can infer that the interface is in a trusted state. (CSCsh72408)

- A port can be either a member of a portchannel or have auto-QoS applied to it, but not both. The two are mutually exclusive features.

Currently, if auto-QoS is applied to a port that is already a member of a portchannel, the application is rejected with an error message. However, the reverse is not true. If auto-QoS is applied first and then the port joins a portchannel, the command is accepted.

The following example using port g2/1 shows the type of usage that should be avoided:

```
conf t
int g2/1
auto qos voice trust
channel-group 10 mode auto
```

This example applies auto-QoS on a port (g2/1) and subsequently makes the port a member of portchannel (10).

Workaround: Do not make a port with auto-QoS enabled a member of a portchannel. (CSCsi95018)

- If you configure auto-QoS on a Layer 2 port, change the port to Layer 3, and then remove auto-QoS on the port, the process will not cleanup the QoS service policies on the port due to inconsistency between when auto-QoS was applied versus when it was removed.

  Similarly, if you Configure auto-QoS on a Layer 3 port, change the port to Layer 2, and then remove auto-QoS on the port, the process does not cleanly remove QoS service policies on the port.

  A sequence similar to the following would lead to the problem on port g2/1

  ```
  conf t
  int g2/1
  switchport
  auto qos voice trust
  no switchport
  no auto qos voice trust
  ```

  Workaround: Revert the port setting to the setting when auto-QoS was applied. If auto-QoS was enabled when the port was a Layer 2 port, it should be reverted to Layer 2 before auto-QoS is removed. Similarly, if the port was set to Layer 3 when auto-QoS was initially applied, it must be reverted to Layer 3 before auto-QoS is removed.

  Referring to the problem sequence, first apply auto-QoS to a Layer 2 port, change it to layer 3, then revert to Layer 2 and remove auto-QoS:

  ```
  conf t
  int g2/1
  switchport
  auto qos voice trust
  no switchport
  switchport
  no auto qos voice trust
  ```

  (CSCsk95871)

- If a class-map is configured with **exceed-action drop**, re-configuring the same class-map with **exceed-action transmit** causes class-map configurations to conflict for the same class-map.

  Workaround: If you plan to change a class-map action, such as **exceed-action**, you meed to remove the class-map with the **no class c1** command under policy-map submode. Then, apply the new class-map with the updated changes.

  CSCsk70826)

- Policing actions are not applied if they appear at the child level of a two-level hierarchical policy-map.

  The switch supports two-level hierarchical policy-maps. Policing actions can be present at only one of the two levels (parent or child). If they are present at the child level, they are not applied.

Workaround: None. (CSCsl06731)

- Applying a policy to a VLAN that has been allocated to a routed port causes the internal VLAN to be policed.

  Workaround: Avoid creating a VLAN that has been allocated internally to a routed port. (CSCsh60244)

- If *exceed burst* is not explicitly configured for a dual rate policer, the **show policy-map** command displays “0” as the burst value.

  Workaround: Enter the **show policy-map interface** command. (CSCsj44237)

- If *burst* is not explicitly configured for a single rate policer, the **show policy-map command** displays an incorrect burst value.

  Workaround: Enter the **show policy-map interface** command. (CSCsi71036)

- When a queuing policy is attached to a trunk port configured with a per-port per-VLAN QoS policy, the port-level queuing policy is processed as part of a per-VLAN policy and is rejected on bootup.

  Queuing policy is supported on a physical interface in the output direction only.

  Workaround: After bootup, reattach a queuing policy on a physical interface. (CSCsk87548)

- When you delete a port-channel with a per-port per-VLAN QoS policy, the switch crashes.

  Workaround: Before deleting the port-channel, do the following:

  1. Remove any per-port per-VLAN QoS policies, if any.

  2. Remove the VLAN configuration on the port-channel with the **no vlan-range** command.

  (CSCsk91916)

- The cbQosPoliceCfgTable mib object is *not* populated by the **police** *bps byte* command.

  Workaround: None. (CSCsk45940)

- Executing **default interface** twice on a port configured with the cisco-phone macro displays the back trace.

  Workaround: Remove the configuration line by line without entering the **default interface** command. (CSCsj23103)

- When you enter the **show policy-map vlan** *vlan* command, unconditional marking actions that are configured on the VLAN are not shown.

  Workaround: None. However, if you enter the **show policy-map** *name*, the unconditional marking actions are displayed. (CSCsi94144)

- Supervisor Engine II-Plus-TS in a Catalyst 4503-E chassis running ROMMON lists the chassis type as "Unknown". After booting IOS, the chassis type is listed properly.

  Workaround: None. (CSCsl72868)

Resolved Caveats in Cisco IOS Release 12.2(40)SG

This section lists the resolved caveats in Release 12.2(40)SG:

- If you initiate a scp copy from the console and it is delayed long enough to cause a timeout, the console is disconnected.

  Workarounds:

  – Use a different copy protocol.

  - Set a longer ssh timout.

  (CSCsc94317)

- When dot1x (radius assigned vlan), port security and voice VLAN is enabled on the port with phone and PC connected to it and PC get authenticated in radius assigned VLAN, on switchover, first packet come from PC will trigger the security violation.

  Workaround: Issue **shut/no shut** on the port to authorize the PC correctly. (CSCsi31362

- The switch will stop forwarding Layer 3 packets for a few seconds during either ISSU runversion or redundancy switch-over.

  The traffic loss only occurs when the interfaces, which the traffic travel through, are configured with HSRP and currently in HSRP Active state.

  Workaround: None. (CSCsi40980)

- If you attempts to upgrade to Cisco IOS Release 12.2(37)SG1 from the Release 12.2(31)SGA and its subsequent maintenance releases, the following harmless message is displayed upon 'issu commitversion':

```
At ACTIVE:
ISSU_PROCESS-3-SYSTEM: Failed to set Standby ISSU state to the local ISSU state.

At STANDBY:
ISSU_PROCESS-3-SYSTEM: STANDBY:System not in [Init (Commit Version)] or [Init (Commit
Version)] for transitioning to [*]

where "*" can be "Init", "Load Version", etc.
```

  Workaround: None. These are informative messages. (CSCsj89384)

- SNMPv3 might not work after an IOS upgrade.

  Workaround: Re-apply user credentials with the **snmp-server user** command.

Open Caveats in Cisco IOS Release 12.2(37)SG1

This section lists the open caveats in Cisco IOS Release 12.2(37)SG1:

- When you enter the **access-list N permit host hostname** command on a redundant chassis operating in SSO mode, you might observe the following syslog messages. The command is not synchronized with the redundant supervisor engine, and keepalive warnings appear.

```
000099: Jul  9 01:22:36.478 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000100: Jul  9 01:22:46.534 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000101: Jul  9 01:22:56.566 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000102: Jul  9 01:23:06.598 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000103: Jul  9 01:23:16.642 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000104: Jul  9 01:23:26.682 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000105: Jul  9 01:23:36.721 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000106: Jul  9 01:23:46.777 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000107: Jul  9 01:23:56.793 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
```

Workaround: When using the **access-list N permit host hostname** command, specify the IP address of the host rather than the hostname (CSCef67489)

- In rare instances, when you are using MAC ACL-based policers, the packet match counters in **show policy-map interface fa6/1** do not show the packets being matched:

```
clearwater#sh policy-map int
  FastEthernet3/2

   Service-policy output: p1

     Class-map: c1 (match-all)
       0 packets<--------It stays at '0' despite of traffic being received
       Match: access-group name fnacl21
       police: Per-interface
         Conform: 9426560 bytes Exceed: 16573440 bytes
```

Workaround: Verify that the MAC addresses being transmitted through the system are learned.

(CSCef01798)

- After an SSO switchover, you may receive a "PM-4-PORT_INCONSISTENT" error message on the switch console if you enter the **shutdown** command, then the **no shutdown** command on the port that is in UDLD error-disable state. This does not impact the switch; the port remains in UDLD error-disable state. Re-entering the **shutdown** command, then the **no shutdown** command on the same port will ensure that the error message does not re-appear.

  Workaround: None. (CSCeg48586)

- When you issue the **ip http secure-server** command (or if the system reads it from the startup configuration), the device will check for the existence of a persistent self-signed certificate during boot up.

  – If such a certificate does not exist and the device's hostname and default_domain have been set, then a persistent self-signed certificate will be generated.

  – If such a certificate exists, the FQDN in the certificate is compared with the current device's hostname and default_domain. If either of these differs from the FQDN in the certificate, then the existing persistent self-signed certificate is replaced with a new one with the updated FQDN. Be aware that the existing keypair is used in the new certificate.

  On a switch that support redundancy, the generation of the self-signed certificate is performed independently on the active and the standby supervisor engines. So, the certificates differ. After switchover, the HTTP client that holds the old certificate can not connect to the HTTPS server.

  Workaround: Re-connect. (CSCsb11964)

- After upgrading to Cisco IOS 12.2(31)SG and later releases, some CPU queues configured as SPAN sources and saved in the startup configuration file do not function as they did in the older software release.

  This only impacts a switch that has any of the following queues are configured as SPAN source in releases prior to 12.2(31)SG and saved to startup-config. The SPAN destination would not get the same traffic after upgrading to 12.2(31)SG.

QueueID	Old QueueName	New QueueName
5	control-packet	control-packet
6	rpf-failure	control-packet

QueueID	Old QueueName	New QueueName
7	adj-same-if	control-packet
8	<unused queue>	control-packet
11	<unused queue>	adj-same-if
13	acl input log	rfp-failure
14	acl input forward	acl input log

Workaround: After upgrading to 12.2(31)SG and later releases, remove the old SPAN source configuration and reconfigure with the new queue names/IDs. For example:

```
Switch(config)# no monitor session n source cpu queue all rx
Switch(config)# monitor session n source cpu queue <new_Queue_Name>
```

(CSCsc94802)

- If you initiate a scp copy from the console and it is delayed long enough to cause a timeout, the console is disconnected.

  Workarounds:

  - Use a different copy protocol.
  - Set a longer ssh timout.

  (CSCsc94317)

- To enable IP CEF if it is disabled by hardware exhaustion, use the **ip cef distributed** command.

  Workaround: None. (CSCsc11726)

- An IP redirect may not be sent out if the outgoing interface on a Catalyst 4500 series switch is an IP unnumbered port.

  This could occur for these reasons:

  - A packet requires an IP redirect to an IP unnumbered outgoing port within 3 minutes of booting the Catalyst 4500 series switch.
  - This is also seen if the switch administrator issues the **shutdown** and **no shutdown** commands on an outgoing interface that has IP unnumbered enabled. The switch receives packets that require redirection and the destination MAC address is already in ARP table.

  Workarounds:

  - Do not inject packets that require IP redirect sent out to an IP unnumbered port within 3 minutes of booting the Catalyst 4500 series switch.
  - Configure the correct default gateway on the host side. (CSCse75660)

- After configuring the **bgp dampening route-map bgp_damp** command on an active supervisor engine in SSO mode, the following system logs are seen on the console of the standby supervisor engine:

  ```
  00:10:34: %BGP-5-DAMPENING_HIGH_MAX_PENALTY: Maximum penalty (32473) is more than
  allowed maximum (20000). Dampening is OFF

  00:10:06: %BGP-5-DAMPENING_HIGH_MAX_PENALTY: Maximum penalty (32473) is more than
  allowed maximum 000). Dampening is OFF
  ```

  At this point, if you revert back to the **bgp dampening** command on the active supervisor engine, the new command is not synchronized with the standby supervisor engine.

Workarounds: Issue the **no bgp dampening** command, then the **bgp dampening** command. (CSCse12485)

- When policing IEEE 802.1Q tagged non-IP traffic and calculating traffic conformance, the policer excludes the four bytes that constitute the 802.1Q tag even when you configure **qos account layer2 encapsulation**.

  Workaround: None. (CSCsg58526)

- In rare instances, the Supervisor Engine V-10GE might reload with the crashdump vector 0x00000100.

  Workaround: Monitor the switch and note the number of occurrences as well as any changes on the network prior to the reload. (CSCsh13318)

- When hardcoded duplex and speed settings are deleted after an interface shuts down, an "a-" is added to the duplex and speed in the output from the **show interface status** command.

  This does not impact performance.

  Workaround: Issue the **no shutdown** command. (CSCsg27395)

- If the ACL of an SVI interface is too large for the TCAM, ARP replies for the associated VLAN may not be processed.

  Workaround: Upgrade to Cisco IOS Release 12.2(31)SG or later and resize the TCAM with the **access-list hardware region balance** command to support the ACL Verify TCAM utilization with the **show platform hardware acl statistics utilization brief** command. (CSCse50565)

- When a transceiver is removed rapidly from one port and placed in another on the same chassis, occasionally a duplicate seeprom message is displayed and the port is not able to handle traffic.

  Workaround: Remove the transceiver from the new port and place it in the old port. Once the SFP is recognized in the old port, remove it slowly and insert it in the new port. (CSCse34693).

- When dot1x (radius assigned vlan), port security and voice VLAN is enabled on the port with phone and PC connected to it and PC get authenticated in radius assigned VLAN, on switchover, first packet come from PC will trigger the security violation.

  Workaround: Issue **shut/no shut** on the port to authorize the PC correctly. (CSCsi31362

- IGMP Filtering feature is not available in Cisco IOS Release 12.2(37)SG. For example, the command **igmp filter ....**, used to apply IGMP filtering on an interface, is not recognized by IOS.

  This is a temporary issue and is expected to be resolved in future IOS releases

  Workaround: None. (CSCsi40783)

- The switch will stop forwarding Layer 3 packets for a few seconds during either ISSU runversion or redundancy switch-over.

  The traffic loss only occurs when the interfaces, which the traffic travel through, are configured with HSRP and currently in HSRP Active state.

  Workaround: None. (CSCsi40980)

- The following error message is seen during an ISSU upgrade from Cisco IOS Release 12.2(31)SGA or 12.2(31)SGA1 to Cisco IOS Release 12.2(37)SG or later images:

  ```
  %CHKPT-4-INVALID: Invalid checkpoint client ID (189)
  ```

  Workaround: None. This message is an informational message. (CSCsi60913)

- When performing an ISSU upgrade and the versions of the active and standby supervisor engines differ, the following message is seen in the standby supervisor engine console:

```
%XDR-6-XDRINVALIDHDR: XDR for client (CEF push) dropped (slots:2 from slot:3
context:145 length:11) due to: invalid context
```

Workaround: None. This is an informational message. (CSCsi60898)

- If you attempt to downgrade to Cisco IOS Release 12.2(37)SG from Release 12.2(37)SG1 and if the process is started with active supervisor engine in slot-2, the downgrade fails at ‘runversion.’

  Workaround: None. (CSCsj83688)

- If you attempts to upgrade to Cisco IOS Release 12.2(37)SG1 from the Release 12.2(31)SGA and its subsequent maintainance releases, the following harmless message is displayed upon 'issu commitversion':

  ```
  At ACTIVE:
  ISSU_PROCESS-3-SYSTEM: Failed to set Standby ISSU state to the local ISSU state.

  At STANDBY:
  ISSU_PROCESS-3-SYSTEM: STANDBY:System not in [Init (Commit Version)] or [Init (Commit
  Version)] for transitioning to [*]

  where "*" can be "Init", "Load Version", etc.
  ```

  Workaround: None. These are informative messages. (CSCsj89384)

- Supervisor Engine II-Plus-TS in a Catalyst 4503-E chassis running ROMMON lists the chassis type as "Unknown". After booting IOS, the chassis type is listed properly.

  Workaround: None. (CSCsl72868)

Resolved Caveats in Cisco IOS Release 12.2(37)SG1

This section lists the resolved caveats in Release 12.2(37)SG1:

- Cisco IOS Software has been enhanced with the introduction of additional software checks to signal improper use of data structures.

  This feature has been introduced in select Cisco IOS Software releases published after April 5, 2007.

  The %DATACORRUPTION-1-DATAINCONSISTENCY error message is preceded by a timestamp:

  ```
  May 17 10:01:27.815 UTC: %DATACORRUPTION-1-DATAINCONSISTENCY: copy error
  ```

  The error message is then followed by a traceback.

  Workaround: Gather the output from the **show tech-support** command and open a service request with the Technical Assistance Center (TAC) or designated support organization. (CSCsj44081)

- Multiple voice-related vulnerabilities are identified in Cisco IOS software, one of which is also shared with Cisco Unified Communications Manager. These vulnerabilities pertain to the following protocols or features:
  - Session Initiation Protocol (SIP)
  - Media Gateway Control Protocol (MGCP)
  - Signaling protocols H.323, H.254
  - Real-time Transport Protocol (RTP)
  - Facsimile reception

Cisco has made free software available to address these vulnerabilities for affected customers. Fixed Cisco IOS software listed in the Software Versions and Fixes section contains fixes for all vulnerabilities mentioned in this advisory.

There are no workarounds available to mitigate the effects of any of the vulnerabilities apart from disabling the protocol or feature itself.

This advisory is posted at
http://www.cisco.com/warp/public/707/cisco-sa-20070808-IOS-voice.shtml

(CSCeb21064)

- Multiple voice-related vulnerabilities are identified in Cisco IOS software, one of which is also shared with Cisco Unified Communications Manager. These vulnerabilities pertain to the following protocols or features:
  - Session Initiation Protocol (SIP)
  - Media Gateway Control Protocol (MGCP)
  - Signaling protocols H.323, H.254
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  Cisco has made free software available to address these vulnerabilities for affected customers. Fixed Cisco IOS software listed in the Software Versions and Fixes section contains fixes for all vulnerabilities mentioned in this advisory.

  There are no workarounds available to mitigate the effects of any of the vulnerabilities apart from disabling the protocol or feature itself.

  This advisory is posted at
  http://www.cisco.com/warp/public/707/cisco-sa-20070808-IOS-voice.shtml

  (CSCsd81407)
- Multiple voice-related vulnerabilities are identified in Cisco IOS software, one of which is also shared with Cisco Unified Communications Manager. These vulnerabilities pertain to the following protocols or features:
  - Session Initiation Protocol (SIP)
  - Media Gateway Control Protocol (MGCP)
  - Signaling protocols H.323, H.254
  - Real-time Transport Protocol (RTP)
  - Facsimile reception

  Cisco has made free software available to address these vulnerabilities for affected customers. Fixed Cisco IOS software listed in the Software Versions and Fixes section contains fixes for all vulnerabilities mentioned in this advisory.

  There are no workarounds available to mitigate the effects of any of the vulnerabilities apart from disabling the protocol or feature itself.

  This advisory is posted at
  http://www.cisco.com/warp/public/707/cisco-sa-20070808-IOS-voice.shtml

  (CSCsi60004)
- The Cisco Next Hop Resolution Protocol (NHRP) feature in Cisco IOS contains a vulnerability that can result in a restart of the device or possible remote code execution.

NHRP is a primary component of the Dynamic Multipoint Virtual Private Network (DMVPN) feature.

NHRP can operate in three ways: at the link layer (Layer 2), over Generic Routing Encapsulation (GRE) and multipoint GRE (mGRE) tunnels and directly on IP (IP protocol number 54). This vulnerability affects all three methods of operation.

NHRP is not enabled by default for Cisco IOS.

This vulnerability is addressed by Cisco bug IDs CSCin95836 for non-12.2 mainline releases and CSCsi23231 for 12.2 mainline releases.

This advisory is posted at

http://www.cisco.com/warp/public/707/cisco-sa-20070808-nhrp.shtml.

(CSCin95836)

Open Caveats in Cisco IOS Release 12.2(37)SG

This section lists the open caveats in Cisco IOS Release 12.2(37)SG:

- When you enter the **access-list N permit host hostname** command on a redundant chassis operating in SSO mode, you might observe the following syslog messages. The command is not synchronized with the redundant supervisor engine, and keepalive warnings appear.

```
000099: Jul  9 01:22:36.478 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000100: Jul  9 01:22:46.534 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000101: Jul  9 01:22:56.566 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000102: Jul  9 01:23:06.598 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000103: Jul  9 01:23:16.642 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000104: Jul  9 01:23:26.682 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000105: Jul  9 01:23:36.721 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000106: Jul  9 01:23:46.777 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000107: Jul  9 01:23:56.793 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
```

  Workaround: When using the **access-list N permit host hostname** command, specify the IP address of the host rather than the hostname (CSCef67489)

- In rare instances, when you are using MAC ACL-based policers, the packet match counters in **show policy-map interface fa6/1** do not show the packets being matched:

```
clearwater#sh policy-map int
  FastEthernet3/2

   Service-policy output: p1

     Class-map: c1 (match-all)
       0 packets<--------It stays at '0' despite of traffic being received
       Match: access-group name fnacl21
       police: Per-interface
         Conform: 9426560 bytes Exceed: 16573440 bytes
```

  Workaround: Verify that the MAC addresses being transmitted through the system are learned.

(CSCef01798)

- After an SSO switchover, you may receive a "PM-4-PORT_INCONSISTENT" error message on the switch console if you enter the **shutdown** command, then the **no shutdown** command on the port that is in UDLD error-disable state. This does not impact the switch; the port remains in UDLD error-disable state. Re-entering the **shutdown** command, then the **no shutdown** command on the same port will ensure that the error message does not re-appear.

  Workaround: None. (CSCeg48586)

- When you issue the **ip http secure-server** command (or if the system reads it from the startup configuration), the device will check for the existence of a persistent self-signed certificate during boot up.

  – If such a certificate does not exist and the device's hostname and default_domain have been set, then a persistent self-signed certificate will be generated.

  – If such a certificate exists, the FQDN in the certificate is compared with the current device's hostname and default_domain. If either of these differs from the FQDN in the certificate, then the existing persistent self-signed certificate is replaced with a new one with the updated FQDN. Be aware that the existing keypair is used in the new certificate.

  On a switch that support redundancy, the generation of the self-signed certificate is performed independently on the active and the standby supervisor engines. So, the certificates differ. After switchover, the HTTP client that holds the old certificate can not connect to the HTTPS server.

  Workaround: Re-connect. (CSCsb11964)

- After upgrading to Cisco IOS 12.2(31)SG and later releases, some CPU queues configured as SPAN sources and saved in the startup configuration file do not function as they did in the older software release.

  This only impacts a switch that has any of the following queues are configured as SPAN source in releases prior to 12.2(31)SG and saved to startup-config. The SPAN destination would not get the same traffic after upgrading to 12.2(31)SG.

QueueID	Old QueueName	New QueueName
5	control-packet	control-packet
6	rpf-failure	control-packet
7	adj-same-if	control-packet
8	<unused queue>	control-packet
11	<unused queue>	adj-same-if
13	acl input log	rfp-failure
14	acl input forward	acl input log

  Workaround: After upgrading to 12.2(31)SG and later releases, remove the old SPAN source configuration and reconfigure with the new queue names/IDs. For example:

```
Switch(config)# no monitor session n source cpu queue all rx
Switch(config)# monitor session n source cpu queue <new_Queue_Name>
```

  (CSCsc94802)

- If you initiate a scp copy from the console and it is delayed long enough to cause a timeout, the console is disconnected.

Workarounds:

- Use a different copy protocol.
- Set a longer ssh timout.

(CSCsc94317)

- To enable IP CEF if it is disabled by hardware exhaustion, use the **ip cef distributed** command.

  Workaround: None. (CSCsc11726)

- An IP redirect may not be sent out if the outgoing interface on a Catalyst 4500 series switch is an IP unnumbered port.

  This could occur for these reasons:

  - A packet requires an IP redirect to an IP unnumbered outgoing port within 3 minutes of booting the Catalyst 4500 series switch.
  - This is also seen if the switch administrator issues the **shutdown** and **no shutdown** commands on an outgoing interface that has IP unnumbered enabled. The switch receives packets that require redirection and the destination MAC address is already in ARP table.

  Workarounds:

  - Do not inject packets that require IP redirect sent out to an IP unnumbered port within 3 minutes of booting the Catalyst 4500 series switch.
  - Configure the correct default gateway on the host side. (CSCse75660)

- After configuring the **bgp dampening route-map bgp_damp** command on an active supervisor engine in SSO mode, the following system logs are seen on the console of the standby supervisor engine:

  ```
  00:10:34: %BGP-5-DAMPENING_HIGH_MAX_PENALTY: Maximum penalty (32473) is more than
  allowed maximum (20000). Dampening is OFF

  00:10:06: %BGP-5-DAMPENING_HIGH_MAX_PENALTY: Maximum penalty (32473) is more than
  allowed maximum 000). Dampening is OFF
  ```

  At this point, if you revert back to the **bgp dampening** command on the active supervisor engine, the new command is not synchronized with the standby supervisor engine.

  Workarounds: Issue the **no bgp dampening** command, then the **bgp dampening** command. (CSCse12485)

- When policing IEEE 802.1Q tagged non-IP traffic and calculating traffic conformance, the policer excludes the four bytes that constitute the 802.1Q tag even when you configure **qos account layer2 encapsulation**.

  Workaround: None. (CSCsg58526)

- In rare instances, the Supervisor Engine V-10GE might reload with the crashdump vector 0x00000100.

  Workaround: Monitor the switch and note the number of occurrences as well as any changes on the network prior to the reload. (CSCsh13318)

- When hardcoded duplex and speed settings are deleted after an interface shuts down, an "a-" is added to the duplex and speed in the output from the **show interface status** command.

  This does not impact performance.

  Workaround: Issue the **no shutdown** command. (CSCsg27395)

- If the ACL of an SVI interface is too large for the TCAM, ARP replies for the associated VLAN may not be processed.

  Workaround: Upgrade to Cisco IOS Release 12.2(31)SG or later and resize the TCAM with the **access-list hardware region balance** command to support the ACL Verify TCAM utilization with the **show platform hardware acl statistics utilization brief** command. (CSCse50565)

- When a transceiver is removed rapidly from one port and placed in another on the same chassis, occasionally a duplicate seeprom message is displayed and the port is not able to handle traffic.

  Workaround: Remove the transceiver from the new port and place it in the old port. Once the SFP is recognized in the old port, remove it slowly and insert it in the new port. (CSCse34693).

- When dot1x (radius assigned vlan), port security and voice VLAN is enabled on the port with phone and PC connected to it and PC get authenticated in radius assigned VLAN, on switchover, first packet come from PC will trigger the security violation.

  Workaround: Issue **shut/no shut** on the port to authorize the PC correctly. (CSCsi31362

- IGMP Filtering feature is not available in Cisco IOS Release 12.2(37)SG. For example, the command **igmp filter ....**, used to apply IGMP filtering on an interface, is not recognized by IOS.

  This is a temporary issue and is expected to be resolved in future IOS releases

  Workaround: None. (CSCsi40783)

- The switch will stop forwarding Layer 3 packets for a few seconds during either ISSU runversion or redundancy switch-over.

  The traffic loss only occurs when the interfaces, which the traffic travel through, are configured with HSRP and currently in HSRP Active state.

  Workaround: None. (CSCsi40980)

- The following error message is seen during an ISSU upgrade from Cisco IOS Release 12.2(31)SGA or 12.2(31)SGA1 to Cisco IOS Release 12.2(37)SG or later images:

  ```
  %CHKPT-4-INVALID: Invalid checkpoint client ID (189)
  ```

  Workaround: None. This message is an informational message. (CSCsi60913)

- When performing an ISSU upgrade and the versions of the active and standby supervisor engines differ, the following message is seen in the standby supervisor engine console:

  ```
  %XDR-6-XDRINVALIDHDR: XDR for client (CEF push) dropped (slots:2 from slot:3
  context:145 length:11) due to: invalid context
  ```

  Workaround: None. This is an informational message. (CSCsi60898)

- Supervisor Engine II-Plus-TS in a Catalyst 4503-E chassis running ROMMON lists the chassis type as "Unknown". After booting IOS, the chassis type is listed properly.

  Workaround: None. (CSCsl72868)

Resolved Caveats in Cisco IOS Release 12.2(37)SG

This section lists the resolved caveats in Release 12.2(37)SG:

- Occassionally, on redundant systems in SSO mode, applying the **apply cisco-phone $AVID vlan** *$VVID vlan* macro command to an interface connected to an IP phone may render the interface in the wrong state relative to the standby supervisor engine. This causes the SVI to be “down” after the switchover.

Workaround: If the SVIs associated with the physical interface are down after the switchover, issue **shutdown** and **no shutdown** commands on the physical interface to bring up the SVIs. (CSCsb02308)

- A bulk sync failure upon issuing the **switchport trunk encapsulation dot1q** command causes the standby supervisor engine to reload.

  Workaround: When this happens, the mismatched command list can be displayed on the active supervisor engine by issuing the **show issu config-sync failures mcl** command. The WS-X4418-GB module only supports the default dot1q encapsulation. The command mismatch can be fixed by removing the **switchport trunk encapsulation dot1q** subinterface command from each of the interfaces associated with the WS-X4418-GB module on the active supervisor engine and then rebooting the standby supervisor engine. Please verify that the above encapsulation command is removed in the running configuration on the active supervisor engine for the above interfaces. The standby supervisor engine will now boot up into SSO mode. Save the configuration on the active supervisor engine after making the above changes. (CSCse86228)

- On redundant systems working in SSO mode, a line-by-line (LBL) configuration sync error occurs between the active and standby supervisor engines when the administrator defaults the configuration for an interface configured with port security. The error causes the standby supervisor engine to reset if the config sync policy for the LBL errors is enforced using the **issu config-sync policy lbl prc** command.

  This problem only occurs if the interface configured with port security is in violation restrict mode (through the **switchport port-security violation restrict** command). Moreover, the interface must be in security violation state when you apply the **default interface** command.

  Workarounds: Bring the interface into shutdown mode before you apply the **default interface** command. (CSCsf30157)

- After an ISSU is performed on a WS-X4448-GB-SFP linecard running Cisco IOS Release 12.2(31)SGA, the output of the **show inventory** command does not display some of the 1000Base SFPs.

  Workaround: None. (CSCse43697)

- PoE switch ports configured with the **switchport voice VLAN untagged** command cause ESMP communication between a supervisor engine and the PoE line card to cease. As a result, a warning message similar to the following will be printed to the console:

  ```
  %C4K_LINECARDMGMTPROTOCOL-4-ONGOINGTIMEOUTWARNING: Astro 2-2(Fa2/9-16) -
  consecutive management requests timed out.
  ```

  Workaround: Remove the switchport voice VLAN untagged configuration from the switch port. (CSCsg76374)

- When trunk ports configured with VLANs associated with SVIs that are participating in a link state routing protocol come up after either a "no shutdown" or a supervisor engine switchover, log messages similar to the following may appear:

  ```
  Nov 19 05:11:02 MET: %IPC-5-WATERMARK: 1801 messages pending in rcv for
  the port CF : Standby(2020000.11) seat 2020000
  ```

  Such messages indicate that there are pending messages for active and standby supervisor engine inter-process communication. This condition does not impact switching traffic.

  Workaround: None. (CSCsg83090)

- Cisco IOS device may crash while processing malformed Secure Sockets Layer (SSL) packets. In order to trigger these vulnerabilities, a malicious client must send malformed packets during the SSL protocol exchange with the vulnerable device.

Successful repeated exploitation of any of these vulnerabilities may lead to a sustained Denial-of-Service (DoS); however, vulnerabilities are not known to compromise either the confidentiality or integrity of the data or the device. These vulnerabilities are not believed to allow an attacker will not be able to decrypt any previously encrypted information.

Cisco IOS is affected by the following vulnerabilities:

- Processing ClientHello messages, documented as Cisco bug ID CSCsb12598
- Processing ChangeCipherSpec messages, documented as Cisco bug ID CSCsb40304
- Processing Finished messages, documented as Cisco bug ID CSCsd92405

Cisco has made free software available to address these vulnerabilities for affected customers. There are workarounds available to mitigate the effects of these vulnerabilities.

This advisory is posted at http://www.cisco.com/warp/public/707/cisco-sa-20070522-SSL.shtml.

Note Another related advisory has been posted with this advisory. This additional advisory also describes a vulnerability related to cryptography that affects Cisco IOS. This related advisory is available at the following link: http://www.cisco.com/warp/public/707/cisco-sa-20070522-crypto.shtml.

A combined software table for Cisco IOS is available to aid customers in choosing a software releases that fixes all security vulnerabilities published as of May 22, 2007. This software table is available at the following link: http://www.cisco.com/warp/public/707/cisco-sa-20070522-cry-bundle.shtml.

(CSCsb12598)

- Cisco IOS device may crash while processing malformed Secure Sockets Layer (SSL) packets. In order to trigger these vulnerabilities, a malicious client must send malformed packets during the SSL protocol exchange with the vulnerable device.

  Successful repeated exploitation of any of these vulnerabilities may lead to a sustained Denial-of-Service (DoS); however, vulnerabilities are not known to compromise either the confidentiality or integrity of the data or the device. These vulnerabilities are not believed to allow an attacker will not be able to decrypt any previously encrypted information.

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  - Processing ClientHello messages, documented as Cisco bug ID CSCsb12598
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  - Processing Finished messages, documented as Cisco bug ID CSCsd92405

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A combined software table for Cisco IOS is available to aid customers in choosing a software releases that fixes all security vulnerabilities published as of May 22, 2007. This software table is available at the following link:
http://www.cisco.com/warp/public/707/cisco-sa-20070522-cry-bundle.shtml.

(CSCsb40304)

- Cisco IOS device may crash while processing malformed Secure Sockets Layer (SSL) packets. In order to trigger these vulnerabilities, a malicious client must send malformed packets during the SSL protocol exchange with the vulnerable device.

  Successful repeated exploitation of any of these vulnerabilities may lead to a sustained Denial-of-Service (DoS); however, vulnerabilities are not known to compromise either the confidentiality or integrity of the data or the device. These vulnerabilities are not believed to allow an attacker will not be able to decrypt any previously encrypted information.

  Cisco IOS is affected by the following vulnerabilities:

  – Processing ClientHello messages, documented as Cisco bug ID CSCsb12598
  – Processing ChangeCipherSpec messages, documented as Cisco bug ID CSCsb40304
  – Processing Finished messages, documented as Cisco bug ID CSCsd92405

  Cisco has made free software available to address these vulnerabilities for affected customers. There are workarounds available to mitigate the effects of these vulnerabilities.

  This advisory is posted at http://www.cisco.com/warp/public/707/cisco-sa-20070522-SSL.shtml.

Note Another related advisory has been posted with this advisory. This additional advisory also describes a vulnerability related to cryptography that affects Cisco IOS. This related advisory is available at the following link:
http://www.cisco.com/warp/public/707/cisco-sa-20070522-crypto.shtml.

A combined software table for Cisco IOS is available to aid customers in choosing a software releases that fixes all security vulnerabilities published as of May 22, 2007. This software table is available at the following link:
http://www.cisco.com/warp/public/707/cisco-sa-20070522-cry-bundle.shtml.

(CSCsd92405)

- A vulnerability has been discovered in a third party cryptographic library which is used by a number of Cisco products. This vulnerability may be triggered when a malformed Abstract Syntax Notation One (ASN.1) object is parsed. Due to the nature of the vulnerability it may be possible, in some cases, to trigger this vulnerability without a valid certificate or valid application-layer credentials (such as a valid username or password).

  Successful repeated exploitation of any of these vulnerabilities may lead to a sustained Denial-of-Service (DoS); however, vulnerabilities are not known to compromise either the confidentiality or integrity of the data or the device. These vulnerabilities are not believed to allow an attacker will not be able to decrypt any previously encrypted information.

  The vulnerable cryptographic library is used in the following Cisco products:

  – Cisco IOS, documented as Cisco bug ID CSCsd85587
  – Cisco IOS XR, documented as Cisco bug ID CSCsg41084
  – Cisco PIX and ASA Security Appliances, documented as Cisco bug ID CSCse91999
  – Cisco Unified CallManager, documented as Cisco bug ID CSCsg44348

– Cisco Firewall Service Module (FWSM)

This vulnerability is also being tracked by CERT/CC as VU#754281.

Cisco has made free software available to address this vulnerability for affected customers. There are no workarounds available to mitigate the effects of the vulnerability.

This advisory is posted at http://www.cisco.com/warp/public/707/cisco-sa-20070522-crypto.shtml.

Note Another related advisory is posted together with this Advisory. It also describes vulnerabilities related to cryptography that affect Cisco IOS. A combined software table for Cisco IOS only is available at http://www.cisco.com/warp/public/707/cisco-sa-20070522-cry-bundle.shtml and can be used to choose a software release which fixes all security vulnerabilities published as of May 22, 2007. The related advisory is published at http://www.cisco.com/warp/public/707/cisco-sa-20070522-SSL.shtml.

(CSCsd85587)

Open Caveats in Cisco IOS Release 12.2(31)SGA5

This section lists the open caveats in Cisco IOS Release 12.2(31)SGA5:

- When you enter the **access-list N permit host hostname** command on a redundant chassis operating in SSO mode, you might observe the following syslog messages. The command is not synchronized with the redundant supervisor engine, and keepalive warnings appear.

```
000099: Jul  9 01:22:36.478 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000100: Jul  9 01:22:46.534 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000101: Jul  9 01:22:56.566 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000102: Jul  9 01:23:06.598 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000103: Jul  9 01:23:16.642 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000104: Jul  9 01:23:26.682 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000105: Jul  9 01:23:36.721 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000106: Jul  9 01:23:46.777 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000107: Jul  9 01:23:56.793 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
```

  Workaround: When using the **access-list N permit host hostname** command, specify the IP address of the host rather than the hostname (CSCef67489)

- In rare instances, when you are using MAC ACL-based policers, the packet match counters in **show policy-map interface fa6/1** do not show the packets being matched:

```
clearwater# sh policy-map int
  FastEthernet3/2

   Service-policy output: p1
```

```
Class-map: c1 (match-all)
  0 packets<--------It stays at '0' despite of traffic being received
  Match: access-group name fnacl21
  police: Per-interface
    Conform: 9426560 bytes Exceed: 16573440 bytes
```

Workaround: Verify that the MAC addresses being transmitted through the system are learned.

(CSCef01798)

- After an SSO switchover, you may receive a "PM-4-PORT_INCONSISTENT" error message on the switch console if you enter the **shutdown** command, then the **no shutdown** command on the port that is in UDLD error-disable state. This does not impact the switch; the port remains in UDLD error-disable state. Re-entering the **shutdown** command, then the **no shutdown** command on the same port will ensure that the error message does not re-appear.

  Workaround: None. (CSCeg48586)

- Occasionally, on redundant systems in SSO mode, applying the **apply cisco-phone $AVID vlan** *$VVID vlan* macro command to an interface connected to an IP phone may render the interface in the wrong state relative to the standby supervisor engine. This causes the SVI to be "down" after the switchover.

  Workaround: If the SVIs associated with the physical interface are down after the switchover, issue **shutdown** and **no shutdown** commands on the physical interface to bring up the SVIs. (CSCsb02308)

- When you issue the **ip http secure-server** command (or if the system reads it from the startup configuration), the device will check for the existence of a persistent self-signed certificate during boot up.
  - If such a certificate does not exist and the device's hostname and default_domain have been set, then a persistent self-signed certificate will be generated.
  - If such a certificate exists, the FQDN in the certificate is compared with the current device's hostname and default_domain. If either of these differs from the FQDN in the certificate, then the existing persistent self-signed certificate is replaced with a new one with the updated FQDN. Be aware that the existing keypair is used in the new certificate.

  On a switch that support redundancy, the generation of the self-signed certificate is performed independently on the active and the standby supervisor engines. So, the certificates differ. After switchover, the HTTP client that holds the old certificate can not connect to the HTTPS server.

  Workaround: Re-connect. (CSCsb11964)

- After upgrading to Cisco IOS 12.2(31)SG and later releases, some CPU queues configured as SPAN sources and saved in the startup configuration file do not function as they did in the older software release.

  This only impacts a switch that has any of the following queues are configured as SPAN source in releases prior to 12.2(31)SG and saved to startup-config. The SPAN destination would not get the same traffic after upgrading to 12.2(31)SG.

QueueID	Old QueueName	New QueueName
5	control-packet	control-packet
6	rpf-failure	control-packet
7	adj-same-if	control-packet
8	<unused queue>	control-packet

QueueID	Old QueueName	New QueueName
11	<unused queue>	adj-same-if
13	acl input log	rfp-failure
14	acl input forward	acl input log

Workaround: After upgrading to 12.2(31)SG and later releases, remove the old SPAN source configuration and reconfigure with the new queue names/IDs. For example:

```
Switch(config)# no monitor session n source cpu queue all rx
Switch(config)# monitor session n source cpu queue <new_Queue_Name>
```

(CSCsc94802)

- If you initiate an scp copy from the console and it is delayed long enough to cause a timeout, the console is disconnected.

  Workarounds:

  - Use a different copy protocol.
  - Set a longer ssh timout.

  (CSCsc94317)

- To enable IP CEF if it is disabled by hardware exhaustion, use the **ip cef distributed** command.

  Workaround: None. (CSCsc11726)

- An IP redirect may not be sent out if the outgoing interface on a Catalyst 4500 series switch is an IP unnumbered port.

  This could occur for these reasons:

  - A packet requires an IP redirect to an IP unnumbered outgoing port within 3 minutes of booting the Catalyst 4500 series switch.
  - This is also seen if the switch administrator issues the **shutdown** and **no shutdown** commands on an outgoing interface that has IP unnumbered enabled. The switch receives packets that require redirection and the destination MAC address is already in ARP table.

  Workarounds:

  - Do not inject packets that require IP redirect sent out to an IP unnumbered port within 3 minutes of booting the Catalyst 4500 series switch.
  - Configure the correct default gateway on the host side. (CSCse75660)

- On redundant systems working in SSO mode, a line-by-line (LBL) configuration sync error occurs between the active and standby supervisor engines when the administrator defaults the configuration for an interface configured with port security. The error causes the standby supervisor engine to reset if the config sync policy for the LBL errors is enforced using the **issu config-sync policy lbl prc** command.

  This problem only occurs if the interface configured with port security is in violation restrict mode (through the **switchport port-security violation restrict** command). Moreover, the interface must be in security violation state when you apply the **default interface** command.

  Workarounds: Bring the interface into shutdown mode before you apply the **default interface** command. (CSCsf30157)

- Configure a LACP channel in 802.1q tunnel mode between a Catalyst 4500 series switch and a Catalyst 6000 series switch, and apply the **redundancy reload shelf** command on the Catalyst 4500 series switch. This can cause link flaps on the EtherChannel interface when the Catalyst 4500 switch reloads.

  This happens to redundant Catalyst 4500 system, regardless the number of supervisor engines on the chassis. This problem applies to Cisco IOS Releases 12.2(31)SG and the 12.2(31)SGA maintenance train.

  Workaround: Shut off the EtherChannel interface and bring it up again. (CSCsf08912)

- Gigabit IP phones cannot process IEEE 802.1Q tagged CDP packets when 802.1X is configured on a voice VLAN. This causes the phone to continually register and de-register with Call Manager. 100 Mbps IP phones are not affected.

  Workaround: Remove the IEEE 802.1X configuration from the switch port. (CSCsg10135)

- When the same MAC addresses are learned and aged out on different VLANs, the Cat4k Mgmt LoPri process will cause CPU utilization to increase. This does not impact local data switching performance because the LoPri process is of low priority with limited access to the CPU.

  Workaround: None. (CSCsg76868)

- When policing IEEE 802.1Q tagged non-IP traffic and calculating traffic conformance, the policer excludes the four bytes that constitute the 802.1Q tag even when you configure **qos account layer2 encapsulation**.

  Workaround: None. (CSCsg58526)

- In rare instances, the Supervisor Engine V-10GE might reload with the crashdump vector 0x00000100.

  Workaround: Monitor the switch and note the number of occurrences as well as any changes on the network prior to the reload. (CSCsh13318)

- When hardcoded duplex and speed settings are deleted after an interface shuts down, an "a-" is added to the duplex and speed in the output from the **show interface status** command.

  This does not impact performance.

  Workaround: Issue the **no shutdown** command. (CSCsg27395)

- When a transceiver is removed rapidly from one port and placed in another on the same chassis, occasionally a duplicate seeprom message is displayed and the port is not able to handle traffic.

  Workaround: Remove the transceiver from the new port and place it in the old port. Once the SFP is recognized in the old port, remove it slowly and insert it in the new port. (CSCse34693).

- If the switch administrator unconfigures a loopback interface that is required by another configured protocol (i.e., BGP) on the primary supervisor engine, the standby supervisor engine will not reload successfully.

  Workaround: Remove all configurations that require the loopback interface before removing the loopback interface. (CSCsf06946)

Resolved Caveats in Cisco IOS Release 12.2(31)SGA5

This section lists the resolved caveats in Release 12.2(31)SGA5:

- After an ISSU is performed on a WS-X4448-GB-SFP linecard running Cisco IOS Release 12.2(31)SGA, the output of the **show inventory** command does not display some of the 1000Base SFPs.

Workaround: None. (CSCse43697)

- After configuring the **bgp dampening route-map bgp_damp** command on an active supervisor engine in SSO mode, the following system logs are seen on the console of the standby supervisor engine:

```
00:10:34: %BGP-5-DAMPENING_HIGH_MAX_PENALTY: Maximum penalty (32473) is more than
allowed maximum (20000). Dampening is OFF

00:10:06: %BGP-5-DAMPENING_HIGH_MAX_PENALTY: Maximum penalty (32473) is more than
allowed maximum 000). Dampening is OFF
```

  At this point, if you revert back to the **bgp dampening** command on the active supervisor engine, the new command is not synchronized with the standby supervisor engine.

  Workarounds: Issue the **no bgp dampening** command, then the **bgp dampening** command. (CSCse12485)

- Once auto-QoS is enabled on a switch, data traffic may be dropped when Dynamic Buffer Leaking (DBL) is enabled.

  While this problem occurs, traffic drops are displayed under the Dbl-Drop-Queue counter on the output of the **show interface <mod/port> counter detail** command.

  Workaround: Disable DBL globally by configuring the **no qos dbl** command. (CSCsk07525)

- When MSDP and OSPF are configured and you issue the **no ip routing** command, the switch reloads because of memory corruption in one of the pointers used by MSDP.

  To observe the problem, the MSDP timer must be set to 1.

  Workaround: Because this s problem does not occur if the MSDP timer is bigger, increase the timer to 5. (CSCsj61328)

- A Cisco network access server (NAS) may enter an infinite loop, produce CPUHOG error messages similar to the following, and then reload:

```
%SYS-3-CPUHOG: Task is running for (112000)msecs, more than (2000)msecs
(1/0),process = RADIUS
```

  If “radius-server retry method reorder” is not configured, the router may neglect to transmit RADIUS packets to servers after the “server-private” server if the “server-private” server does not respond. In addition, the reference count of a server, as shown by the output of the <CmdBold>debug aaa server-ref-count<noCmdBold> EXEC command, may improperly drop to zero. This results in no packets being transmitted to the server unless it is unconfigured and reconfigured.

  Workaround: None. (CSCin45879)

- Let us say that you have the following topology with private trunk links configure:

  Multicast Source---4500------Private VLAN Trunk----Switch-----STB

  When you change channels on the set top box, the IGMP leaves are not acknowledged and the traffic accumulates across the link (the link utilization increases by 4mb).

  Workaround: Remove the trunk configuration and configure the link as an access port. (CSCsl09521)

- A router configured with **ip summary-address rip 0.0.0.0 0.0.0.0** that is running RIP on releases later than Cisco IOS 12.3(14.8) will send out the default with a metric of 16.

- A switch running RIP on a Cisco IOS Release after 12.3(14.8) that has **ip summary-address rip 0.0.0.0 0.0.0.0** configured on an interface will send out the default with a metric of 16.

Workaround: Instead of using **ip summary-address rip 0.0.0.0 0.0.0.0** to only send out the default, configure a distribute-list under the rip process. (CSCsd68016)

- A Catalyst 4500 supervisor engine may crash when configuring **ip flow-aggregation cache**.

  This caveats impacts the following supervisor engines:

  - WS-X4516-10GE
  - WS-X4516 with the Netflow daughter card WS-F4531
  - WS-X4515 with the Netflow daughter card WS-F4531

  This problem exists in the Cisco IOS Releases 12.2(25)EWAx, 12.2(25)SG, 12.2(31)SG and 12.2(31)SGAx. It does not exist in Cisco IOS Release 12.2(37)SG.

  Workaround: Do not configure the **ip flow-aggregation cache** command until either Cisco IOS Release 12.2(25)EWA11 or 12.2(31)SGA5 IOS is available. Until then, upgrade your switch to Cisco IOS Release 12.2(37)SGx. (CSCsk21849)

Open Caveats in Cisco IOS Release 12.2(31)SGA4

This section lists the open caveats in Cisco IOS Release 12.2(31)SGA4:

- When you enter the **access-list N permit host hostname** command on a redundant chassis operating in SSO mode, you might observe the following syslog messages. The command is not synchronized with the redundant supervisor engine, and keepalive warnings appear.

```
000099: Jul  9 01:22:36.478 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000100: Jul  9 01:22:46.534 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000101: Jul  9 01:22:56.566 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000102: Jul  9 01:23:06.598 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000103: Jul  9 01:23:16.642 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000104: Jul  9 01:23:26.682 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000105: Jul  9 01:23:36.721 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000106: Jul  9 01:23:46.777 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000107: Jul  9 01:23:56.793 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
```

  Workaround: When using the **access-list N permit host hostname** command, specify the IP address of the host rather than the hostname (CSCef67489)

- In rare instances, when you are using MAC ACL-based policers, the packet match counters in **show policy-map interface fa6/1** do not show the packets being matched:

```
clearwater#sh policy-map int
  FastEthernet3/2

   Service-policy output: p1

     Class-map: c1 (match-all)
       0 packets<--------It stays at '0' despite of traffic being received
       Match: access-group name fnacl21
       police: Per-interface
         Conform: 9426560 bytes Exceed: 16573440 bytes
```

Workaround: Verify that the MAC addresses being transmitted through the system are learned.

(CSCef01798)

- After an SSO switchover, you may receive a "PM-4-PORT_INCONSISTENT" error message on the switch console if you enter the **shutdown** command, then the **no shutdown** command on the port that is in UDLD error-disable state. This does not impact the switch; the port remains in UDLD error-disable state. Re-entering the **shutdown** command, then the **no shutdown** command on the same port will ensure that the error message does not re-appear.

  Workaround: None. (CSCeg48586)

- Occassionally, on redundant systems in SSO mode, applying the **apply cisco-phone $AVID vlan** *$VVID vlan* macro command to an interface connected to an IP phone may render the interface in the wrong state relative to the standby supervisor engine. This causes the SVI to be "down" after the switchover.

  Workaround: If the SVIs associated with the physical interface are down after the switchover, issue **shutdown** and **no shutdown** commands on the physical interface to bring up the SVIs. (CSCsb02308)

- When you issue the **ip http secure-server** command (or if the system reads it from the startup configuration), the device will check for the existence of a persistent self-signed certificate during boot up.

  – If such a certificate does not exist and the device's hostname and default_domain have been set, then a persistent self-signed certificate will be generated.

  – If such a certificate exists, the FQDN in the certificate is compared with the current device's hostname and default_domain. If either of these differs from the FQDN in the certificate, then the existing persistent self-signed certificate is replaced with a new one with the updated FQDN. Be aware that the existing keypair is used in the new certificate.

  On a switch that support redundancy, the generation of the self-signed certificate is performed independently on the active and the standby supervisor engines. So, the certificates differ. After switchover, the HTTP client that holds the old certificate can not connect to the HTTPS server.

  Workaround: Re-connect. (CSCsb11964)

- After upgrading to Cisco IOS 12.2(31)SG and later releases, some CPU queues configured as SPAN sources and saved in the startup configuration file do not function as they did in the older software release.

  This only impacts a switch that has any of the following queues are configured as SPAN source in releases prior to 12.2(31)SG and saved to startup-config. The SPAN destination would not get the same traffic after upgrading to 12.2(31)SG.

QueueID	Old QueueName	New QueueName
5	control-packet	control-packet
6	rpf-failure	control-packet
7	adj-same-if	control-packet
8	<unused queue>	control-packet
11	<unused queue>	adj-same-if
13	acl input log	rfp-failure
14	acl input forward	acl input log

Workaround: After upgrading to 12.2(31)SG and later releases, remove the old SPAN source configuration and reconfigure with the new queue names/IDs. For example:

```
Switch(config)# no monitor session n source cpu queue all rx
Switch(config)# monitor session n source cpu queue <new_Queue_Name>
```

(CSCsc94802)

- If you initiate an scp copy from the console and it is delayed long enough to cause a timeout, the console is disconnected.

  Workarounds:

  - Use a different copy protocol.
  - Set a longer ssh timout.

  (CSCsc94317)

- To enable IP CEF if it is disabled by hardware exhaustion, use the **ip cef distributed** command.

  Workaround: None. (CSCsc11726)

- An IP redirect may not be sent out if the outgoing interface on a Catalyst 4500 series switch is an IP unnumbered port.

  This could occur for these reasons:

  - A packet requires an IP redirect to an IP unnumbered outgoing port within 3 minutes of booting the Catalyst 4500 series switch.
  - This is also seen if the switch administrator issues the **shutdown** and **no shutdown** commands on an outgoing interface that has IP unnumbered enabled. The switch receives packets that require redirection and the destination MAC address is already in ARP table.

  Workarounds:

  - Do not inject packets that require IP redirect sent out to an IP unnumbered port within 3 minutes of booting the Catalyst 4500 series switch.
  - Configure the correct default gateway on the host side. (CSCse75660)

- After configuring the **bgp dampening route-map bgp_damp** command on an active supervisor engine in SSO mode, the following system logs are seen on the console of the standby supervisor engine:

  ```
  00:10:34: %BGP-5-DAMPENING_HIGH_MAX_PENALTY: Maximum penalty (32473) is more than
  allowed maximum (20000). Dampening is OFF

  00:10:06: %BGP-5-DAMPENING_HIGH_MAX_PENALTY: Maximum penalty (32473) is more than
  allowed maximum 000). Dampening is OFF
  ```

  At this point, if you revert back to the **bgp dampening** command on the active supervisor engine, the new command is not synchronized with the standby supervisor engine.

  Workarounds: Issue the **no bgp dampening** command, then the **bgp dampening** command. (CSCse12485)

- On redundant systems working in SSO mode, a line-by-line (LBL) configuration sync error occurs between the active and standby supervisor engines when the administrator defaults the configuration for an interface configured with port security. The error causes the standby supervisor engine to reset if the config sync policy for the LBL errors is enforced using the **issu config-sync policy lbl prc** command.

This problem only occurs if the interface configured with port security is in violation restrict mode (through the **switchport port-security violation restrict** command). Moreover, the interface must be in security violation state when you apply the **default interface** command.

Workarounds: Bring the interface into shutdown mode before you apply the **default interface** command. (CSCsf30157)

- After an ISSU is performed on a WS-X4448-GB-SFP linecard running Cisco IOS Release 12.2(31)SGA, the output of the **show inventory** command does not display some of the 1000Base SFPs.

  Workaround: None. (CSCse43697)

- Configure a LACP channel in 802.1q tunnel mode between a Catalyst 4500 series switch and a Catalyst 6000 series switch, and apply the **redundancy reload shelf** command on the Catalyst 4500 series switch. This can cause link flaps on the EtherChannel interface when the Catalyst 4500 switch reloads.

  This happens to redundant Catalyst 4500 system, regardless the number of supervisor engines on the chassis. This problem applies to Cisco IOS Releases 12.2(31)SG and the 12.2(31)SGA maintenance train.

  Workaround: Shut off the EtherChannel interface and bring it up again. (CSCsf08912)

- Gigabit IP phones cannot process IEEE 802.1Q tagged CDP packets when 802.1X is configured on a voice VLAN. This causes the phone to continually register and de-register with Call Manager. 100 Mbps IP phones are not affected.

  Workaround: Remove the IEEE 802.1X configuration from the switch port. (CSCsg10135)

- When the same MAC addresses are learned and aged out on different VLANs, the Cat4k Mgmt LoPri process will cause CPU utilization to increase. This does not impact local data switching performance because the LoPri process is of low priority with limited access to the CPU.

  Workaround: None. (CSCsg76868)

- When policing IEEE 802.1Q tagged non-IP traffic and calculating traffic conformance, the policer excludes the four bytes that constitute the 802.1Q tag even when you configure **qos account layer2 encapsulation**.

  Workaround: None. (CSCsg58526)

- In rare instances, the Supervisor Engine V-10GE might reload with the crashdump vector 0x00000100.

  Workaround: Monitor the switch and note the number of occurrences as well as any changes on the network prior to the reload. (CSCsh13318)

- When hardcoded duplex and speed settings are deleted after an interface shuts down, an "a-" is added to the duplex and speed in the output from the **show interface status** command.

  This does not impact performance.

  Workaround: Issue the **no shutdown** command. (CSCsg27395)

- When a transceiver is removed rapidly from one port and placed in another on the same chassis, occasionally a duplicate seeprom message is displayed and the port is not able to handle traffic.

  Workaround: Remove the transceiver from the new port and place it in the old port. Once the SFP is recognized in the old port, remove it slowly and insert it in the new port. (CSCse34693).

- If the switch administrator unconfigures a loopback interface that is required by another configured protocol (i.e., BGP) on the primary supervisor engine, the standby supervisor engine will not reload successfully.

Workaround: Remove all configurations that require the loopback interface before removing the loopback interface. (CSCsf06946)

Resolved Caveats in Cisco IOS Release 12.2(31)SGA4

This section lists the resolved caveats in Release 12.2(31)SGA4:

- For Cisco IOS Releases 12.2(25)EWA10, 12.2(31)SGA2 and 12.2(31)SGA3, PoE Health Monitoring Diagnostic software introduced via CSCsf26804 *incorrectly* reports PoE errors for module WS-X4548-GB-RJ45V, hardware revision 4.0. (Use the **show module** command to see the hardware revision of module.) The software reloads the PoE module continuously, and the module will not operate.

  WS-X4548-GB-RJ45V with hardware revision 4.0 is NOT impacted by the problem reported in CSCsf26804 hence PoE health Monitor checks are not applicable to the module.

  Workaround: None.

  This caveat is fixed in 12.2(25)EWA11 and 12.2(31)SGA4 software releases.

  Release 12.2(37)SG is other recommended software release. 12.2(37)SG does not have the fix for CSCsf26804 and hence does not run into CSCsk85158.

  A linecard replacement is *not* needed. *Do not* RMA the module. (CSCsk85158)

- When trunk ports configured with VLANs associated with SVIs that are participating in a link state routing protocol come up after either a **no shutdown** or a supervisor engine switchover, log messages similar to the following may appear:

  ```
  Nov 19 05:11:02 MET: %IPC-5-WATERMARK: 1801 messages pending in rcv for
  the port CF : Standby(2020000.11) seat 2020000
  ```

  Such messages indicate that there are pending messages for active and standby supervisor engine inter-process communication. This condition does not impact switching traffic.

  Workaround: None. (CSCsg83090)

- For Cisco IOS Release 12.2(31)SG and later releases, RADIUS attribute 32 is not sent to the RADIUS server.

  Workaround: Downgrade to Cisco IOS Release 12.2(25)EWA10. (CSCsi22041)

- An inconsistancy exists between the default signalling DSCP value used by the Catalyst 4500 series switch and CallManager 4.x, which uses DSCP 24 (by default) for the Cisco IP phone and softphone signalling. However, Auto-QoS operating on a switch requires DSCP 26. This inconsistancy causes Cisco IP phone packets to egress the switch with an incorrect DSCP. This also prevents Softphone/IP Communicator packets from obtaining the appropriate QoS.

  ```
  Switch# show qos map cos dscp
  CoS-DSCP Mapping Table
  CoS: 0 1 2 3 4 5 6 7
  --------------------------------
  DSCP: 0 8 16 26 32 46 48 56
  ```

  Workaround: None. (CSCsi52529)

- If multiple interfaces in the OSPF area have the same IP address (duplicate IP addresses are present in the network) and the IP address is used as a link-state ID of the network LSA, this network LSA might occur in the OSPF database with a high Age:

  ```
                  Net Link States (Area 100)
  ```

```
Link ID         ADV Router      Age         Seq#       Checksum
192.168.22.2     192.168.22.6     3391732      0x80000CCE 0x0053CD
```

Additionally, CPU load for OSPF process might increase.

Workaround: Avoid conflicting IP addresses. Remove duplicate IP address or shutdown the interface. (CSCsi11438)

- Lock & Key on a Catalyst 4948 switch running Cisco IOS Release 12.2(31)SGA1 does not work properly. When you open up the ACL with the **access-enable host** command, the ACL is correctly updated with an entry for the host. You can verify this with the **show access-list** command. However, the entry does not take affect and the ACL does not permit traffic from that IP address.

  Workaround: After entering the **access-enable host** command, remove, then reapply the ACL to the interface. (CSCsi20981)

- When a port on a Catalyst 4500 series switch is configured as a Private VLAN trunk port carrying normal and secondary VLANs, any ingress QoS policy applied to normal VLANs on that port in the ingress direction does not get programmed in the hardware. So, ingress traffic on normal VLANs cannot be policed using per-port per-VLAN input policers.

  Ingress service policies applied to secondary VLANs on that port work properly and are not affected.

  Workaround: None. (CSCsi48332)

- On a WS-X4418-GB line card, a bulk sync failure upon issuing the **switchport trunk encapsulation dot1q** command causes the standby supervisor engine to reload.

  Workaround: When this happens, the mismatched command list can be displayed on the active supervisor engine by issuing the **show issu config-sync failures mcl** command. The WS-X4418-GB module only supports the default dot1q encapsulation. The command mismatch can be fixed by removing the **switchport trunk encapsulation dot1q** subinterface command from each of the interfaces associated with the WS-X4418-GB module on the active supervisor engine and then rebooting the standby supervisor engine. Please verify that the above encapsulation command is removed in the running configuration on the active supervisor engine for the above interfaces. The standby supervisor engine will now boot up into SSO mode. Save the configuration on the active supervisor engine after making the above changes. (CSCse86228)

Open Caveats in Cisco IOS Release 12.2(31)SGA3

This section lists the open caveats in Cisco IOS Release 12.2(31)SGA3:

- When you enter the **access-list N permit host hostname** command on a redundant chassis operating in SSO mode, you might observe the following syslog messages. The command is not synchronized with the redundant supervisor engine, and keepalive warnings appear.

```
000099: Jul  9 01:22:36.478 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000100: Jul  9 01:22:46.534 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000101: Jul  9 01:22:56.566 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000102: Jul  9 01:23:06.598 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000103: Jul  9 01:23:16.642 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000104: Jul  9 01:23:26.682 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
```

```
000105: Jul  9 01:23:36.721 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000106: Jul  9 01:23:46.777 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000107: Jul  9 01:23:56.793 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
```

Workaround: When using the **access-list N permit host hostname** command, specify the IP address of the host rather than the hostname (CSCef67489)

- In rare instances, when you are using MAC ACL-based policers, the packet match counters in **show policy-map interface fa6/1** do not show the packets being matched:

```
clearwater#sh policy-map int
  FastEthernet3/2

   Service-policy output: p1

     Class-map: c1 (match-all)
       0 packets<--------It stays at '0' despite of traffic being received
       Match: access-group name fnacl21
       police: Per-interface
         Conform: 9426560 bytes Exceed: 16573440 bytes
```

Workaround: Verify that the MAC addresses being transmitted through the system are learned.

(CSCef01798)

- After an SSO switchover, you may receive a "PM-4-PORT_INCONSISTENT" error message on the switch console if you enter the **shutdown** command, then the **no shutdown** command on the port that is in UDLD error-disable state. This does not impact the switch; the port remains in UDLD error-disable state. Re-entering the **shutdown** command, then the **no shutdown** command on the same port will ensure that the error message does not re-appear.

  Workaround: None. (CSCeg48586)

- Occassionally, on redundant systems in SSO mode, applying the **apply cisco-phone $AVID vlan** *$VVID vlan* macro command to an interface connected to an IP phone may render the interface in the wrong state relative to the standby supervisor engine. This causes the SVI to be "down" after the switchover.

  Workaround: If the SVIs associated with the physical interface are down after the switchover, issue **shutdown** and **no shutdown** commands on the physical interface to bring up the SVIs. (CSCsb02308)

- When you issue the **ip http secure-server** command (or if the system reads it from the startup configuration), the device will check for the existence of a persistent self-signed certificate during boot up.
  - If such a certificate does not exist and the device's hostname and default_domain have been set, then a persistent self-signed certificate will be generated.
  - If such a certificate exists, the FQDN in the certificate is compared with the current device's hostname and default_domain. If either of these differs from the FQDN in the certificate, then the existing persistent self-signed certificate is replaced with a new one with the updated FQDN. Be aware that the existing keypair is used in the new certificate.

  On a switch that support redundancy, the generation of the self-signed certificate is performed independently on the active and the standby supervisor engines. So, the certificates differ. After switchover, the HTTP client that holds the old certificate can not connect to the HTTPS server.

  Workaround: Re-connect. (CSCsb11964)

- After upgrading to Cisco IOS 12.2(31)SG and later releases, some CPU queues configured as SPAN sources and saved in the startup configuration file do not function as they did in the older software release.

  This only impacts a switch that has any of the following queues are configured as SPAN source in releases prior to 12.2(31)SG and saved to startup-config. The SPAN destination would not get the same traffic after upgrading to 12.2(31)SG.

QueueID	Old QueueName	New QueueName
5	control-packet	control-packet
6	rpf-failure	control-packet
7	adj-same-if	control-packet
8	<unused queue>	control-packet
11	<unused queue>	adj-same-if
13	acl input log	rfp-failure
14	acl input forward	acl input log

  Workaround: After upgrading to 12.2(31)SG and later releases, remove the old SPAN source configuration and reconfigure with the new queue names/IDs. For example:

```
Switch(config)# no monitor session n source cpu queue all rx
Switch(config)# monitor session n source cpu queue <new_Queue_Name>
```

  (CSCsc94802)

- If you initiate an scp copy from the console and it is delayed long enough to cause a timeout, the console is disconnected.

  Workarounds:

  - Use a different copy protocol.
  - Set a longer ssh timout.

  (CSCsc94317)

- To enable IP CEF if it is disabled by hardware exhaustion, use the **ip cef distributed** command.

  Workaround: None. (CSCsc11726)

- A bulk sync failure upon issuing the **switchport trunk encapsulation dot1q** command causes the standby supervisor engine to reload.

  Workaround: When this happens, the mismatched command list can be displayed on the active supervisor engine by issuing the **show issu config-sync failures mcl** command. The WS-X4418-GB module only supports the default dot1q encapsulation. The command mismatch can be fixed by removing the **switchport trunk encapsulation dot1q** subinterface command from each of the interfaces associated with the WS-X4418-GB module on the active supervisor engine and then rebooting the standby supervisor engine. Please verify that the above encapsulation command is removed in the running configuration on the active supervisor engine for the above interfaces. The standby supervisor engine will now boot up into SSO mode. Save the configuration on the active supervisor engine after making the above changes. (CSCse86228)

- An IP redirect may not be sent out if the outgoing interface on a Catalyst 4500 series switch is an IP unnumbered port.

  This could occur for these reasons:

  - A packet requires an IP redirect to an IP unnumbered outgoing port within 3 minutes of booting the Catalyst 4500 series switch.
  - This is also seen if the switch administrator issues the **shutdown** and **no shutdown** commands on an outgoing interface that has IP unnumbered enabled. The switch receives packets that require redirection and the destination MAC address is already in ARP table.

  Workarounds:

  - Do not inject packets that require IP redirect sent out to an IP unnumbered port within 3 minutes of booting the Catalyst 4500 series switch.
  - Configure the correct default gateway on the host side. (CSCse75660)

- After configuring the **bgp dampening route-map bgp_damp** command on an active supervisor engine in SSO mode, the following system logs are seen on the console of the standby supervisor engine:

  ```
  00:10:34: %BGP-5-DAMPENING_HIGH_MAX_PENALTY: Maximum penalty (32473) is more than
  allowed maximum (20000). Dampening is OFF

  00:10:06: %BGP-5-DAMPENING_HIGH_MAX_PENALTY: Maximum penalty (32473) is more than
  allowed maximum 000). Dampening is OFF
  ```

  At this point, if you revert back to the **bgp dampening** command on the active supervisor engine, the new command is not synchronized with the standby supervisor engine.

  Workarounds: Issue the **no bgp dampening** command, then the **bgp dampening** command. (CSCse12485)

- On redundant systems working in SSO mode, a line-by-line (LBL) configuration sync error occurs between the active and standby supervisor engines when the administrator defaults the configuration for an interface configured with port security. The error causes the standby supervisor engine to reset if the config sync policy for the LBL errors is enforced using the **issu config-sync policy lbl prc** command.

  This problem only occurs if the interface configured with port security is in violation restrict mode (through the **switchport port-security violation restrict** command). Moreover, the interface must be in security violation state when you apply the **default interface** command.

  Workarounds: Bring the interface into shutdown mode before you apply the **default interface** command. (CSCsf30157)

- After an ISSU is performed on a WS-X4448-GB-SFP linecard running Cisco IOS Release 12.2(31)SGA, the output of the **show inventory** command does not display some of the 1000Base SFPs.

  Workaround: None. (CSCse43697)

- A bulk sync failure upon issuing the **switchport trunk encapsulation dot1q** command causes the standby supervisor engine to reload.

  Workaround: When this happens, the mismatched command list can be displayed on the active supervisor engine by issuing the **show issu config-sync failures mcl** command. The WS-X4418-GB module only supports the default dot1q encapsulation. The command mismatch can be fixed by removing the **switchport trunk encapsulation dot1q** subinterface command from each of the interfaces associated with the WS-X4418-GB module on the active supervisor engine and then rebooting the standby supervisor engine. Please verify that the above encapsulation command is removed in the running configuration on the active supervisor engine for the above interfaces. The standby supervisor engine will now boot up into SSO mode. Save the configuration on the active supervisor engine after making the above changes. (CSCse86228)

- Configure a LACP channel in 802.1q tunnel mode between a Catalyst 4500 series switch and a Catalyst 6000 series switch, and apply the **redundancy reload shelf** command on the Catalyst 4500 series switch. This can cause link flaps on the EtherChannel interface when the Catalyst 4500 switch reloads.

  This happens to redundant Catalyst 4500 system, regardless the number of supervisor engines on the chassis. This problem applies to Cisco IOS Releases 12.2(31)SG and the 12.2(31)SGA maintenance train.

  Workaround: Shut off the EtherChannel interface and bring it up again. (CSCsf08912)

- Gigabit IP phones cannot process IEEE 802.1Q tagged CDP packets when 802.1X is configured on a voice VLAN. This causes the phone to continually register and de-register with Call Manager. 100 Mbps IP phones are not affected.

  Workaround: Remove the IEEE 802.1X configuration from the switch port. (CSCsg10135)

- When the same MAC addresses are learned and aged out on different VLANs, the Cat4k Mgmt LoPri process will cause CPU utilization to increase. This does not impact local data switching performance because the LoPri process is of low priority with limited access to the CPU.

  Workaround: None. (CSCsg76868)

- When trunk ports configured with VLANs associated with SVIs that are participating in a link state routing protocol come up after either a "no shutdown" or a supervisor engine switchover, log messages similar to the following may appear:

  ```
  Nov 19 05:11:02 MET: %IPC-5-WATERMARK: 1801 messages pending in rcv for
  the port CF : Standby(2020000.11) seat 2020000
  ```

  Such messages indicate that there are pending messages for active and standby supervisor engine inter-process communication. This condition does not impact switching traffic.

  Workaround: None. (CSCsg83090)

- When policing IEEE 802.1Q tagged non-IP traffic and calculating traffic conformance, the policer excludes the four bytes that constitute the 802.1Q tag even when you configure **qos account layer2 encapsulation**.

  Workaround: None. (CSCsg58526)

- In rare instances, the Supervisor Engine V-10GE might reload with the crashdump vector 0x00000100.

  Workaround: Monitor the switch and note the number of occurrences as well as any changes on the network prior to the reload. (CSCsh13318)

- When hardcoded duplex and speed settings are deleted after an interface shuts down, an "a-" is added to the duplex and speed in the output from the **show interface status** command.

  This does not impact performance.

  Workaround: Issue the **no shutdown** command. (CSCsg27395)

- When a transceiver is removed rapidly from one port and placed in another on the same chassis, occasionally a duplicate seeprom message is displayed and the port is not able to handle traffic.

  Workaround: Remove the transceiver from the new port and place it in the old port. Once the SFP is recognized in the old port, remove it slowly and insert it in the new port. (CSCse34693).

- If the switch administrator unconfigures a loopback interface that is required by another configured protocol (i.e., BGP) on the primary supervisor engine, the standby supervisor engine will not reload successfully.

Workaround: Remove all configurations that require the loopback interface before removing the loopback interface. (CSCsf06946)

- The RADIUS attribute 32 is not being sent to the RADIUS server for Cisco IOS Release 12.2(31)SG and beyond.

  Workaround: Downgrade to Cisco IOS Release 12.2(25)EWA10, if feasible. (CSCsi22041)

Resolved Caveats in Cisco IOS Release 12.2(31)SGA3

This section lists the resolved caveats in Release 12.2(31)SGA3:

- Cisco IOS Software has been enhanced with the introduction of additional software checks to signal improper use of data structures.

  This feature has been introduced in select Cisco IOS Software releases published after April 5, 2007.

  The %DATACORRUPTION-1-DATAINCONSISTENCY error message is preceded by a timestamp:

  ```
  May 17 10:01:27.815 UTC: %DATACORRUPTION-1-DATAINCONSISTENCY: copy error
  ```

  The error message is then followed by a traceback.

  Workaround: Gather the output from the **show tech-support** command and open a service request with the Technical Assistance Center (TAC) or designated support organization. (CSCsj44081)

- The Cisco Next Hop Resolution Protocol (NHRP) feature in Cisco IOS contains a vulnerability that can result in a restart of the device or possible remote code execution.

  NHRP is a primary component of the Dynamic Multipoint Virtual Private Network (DMVPN) feature.

  NHRP can operate in three ways: at the link layer (Layer 2), over Generic Routing Encapsulation (GRE) and multipoint GRE (mGRE) tunnels and directly on IP (IP protocol number 54). This vulnerability affects all three methods of operation.

  NHRP is not enabled by default for Cisco IOS.

  This vulnerability is addressed by Cisco bug IDs CSCin95836 for non-12.2 mainline releases and CSCsi23231 for 12.2 mainline releases.

  This advisory is posted at

  http://www.cisco.com/warp/public/707/cisco-sa-20070808-nhrp.shtml.

  (CSCin95836)

Open Caveats in Cisco IOS Release 12.2(31)SGA2

This section lists the open caveats in Cisco IOS Release 12.2(31)SGA2:

- When you enter the **access-list N permit host hostname** command on a redundant chassis operating in SSO mode, you might observe the following syslog messages. The command is not synchronized with the redundant supervisor engine, and keepalive warnings appear.

  ```
  000099: Jul  9 01:22:36.478 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
  config-changed command to standby
  000100: Jul  9 01:22:46.534 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
  config-changed command to standby
  000101: Jul  9 01:22:56.566 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
  config-changed command to standby
  ```

```
000102: Jul  9 01:23:06.598 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000103: Jul  9 01:23:16.642 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000104: Jul  9 01:23:26.682 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000105: Jul  9 01:23:36.721 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000106: Jul  9 01:23:46.777 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000107: Jul  9 01:23:56.793 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
```

Workaround: When using the **access-list N permit host hostname** command, specify the IP address of the host rather than the hostname (CSCef67489)

- In rare instances, when you are using MAC ACL-based policers, the packet match counters in **show policy-map interface fa6/1** do not show the packets being matched:

```
clearwater#sh policy-map int
  FastEthernet3/2

   Service-policy output: p1

     Class-map: c1 (match-all)
       0 packets<--------It stays at '0' despite of traffic being received
       Match: access-group name fnacl21
       police: Per-interface
         Conform: 9426560 bytes Exceed: 16573440 bytes
```

Workaround: Verify that the MAC addresses being transmitted through the system are learned.

(CSCef01798)

- After an SSO switchover, you may receive a “PM-4-PORT_INCONSISTENT” error message on the switch console if you enter the **shutdown** command, then the **no shutdown** command on the port that is in UDLD error-disable state. This does not impact the switch; the port remains in UDLD error-disable state. Re-entering the **shutdown** command, then the **no shutdown** command on the same port will ensure that the error message does not re-appear.

  Workaround: None. (CSCeg48586)

- Occassionally, on redundant systems in SSO mode, applying the **apply cisco-phone $AVID vlan** *$VVID vlan* macro command to an interface connected to an IP phone may render the interface in the wrong state relative to the standby supervisor engine. This causes the SVI to be “down” after the switchover.

  Workaround: If the SVIs associated with the physical interface are down after the switchover, issue **shutdown** and **no shutdown** commands on the physical interface to bring up the SVIs. (CSCsb02308)

- When you issue the **ip http secure-server** command (or if the system reads it from the startup configuration), the device will check for the existence of a persistent self-signed certificate during boot up.
  - If such a certificate does not exist and the device's hostname and default_domain have been set, then a persistent self-signed certificate will be generated.
  - If such a certificate exists, the FQDN in the certificate is compared with the current device's hostname and default_domain. If either of these differs from the FQDN in the certificate, then the existing persistent self-signed certificate is replaced with a new one with the updated FQDN. Be aware that the existing keypair is used in the new certificate.

On a switch that support redundancy, the generation of the self-signed certificate is performed independently on the active and the standby supervisor engines. So, the certificates differ. After switchover, the HTTP client that holds the old certificate can not connect to the HTTPS server.

Workaround: Re-connect. (CSCsb11964)

- After upgrading to Cisco IOS 12.2(31)SG and later releases, some CPU queues configured as SPAN sources and saved in the startup configuration file do not function as they did in the older software release.

  This only impacts a switch that has any of the following queues are configured as SPAN source in releases prior to 12.2(31)SG and saved to startup-config. The SPAN destination would not get the same traffic after upgrading to 12.2(31)SG.

QueueID	Old QueueName	New QueueName
5	control-packet	control-packet
6	rpf-failure	control-packet
7	adj-same-if	control-packet
8	<unused queue>	control-packet
11	<unused queue>	adj-same-if
13	acl input log	rfp-failure
14	acl input forward	acl input log

  Workaround: After upgrading to 12.2(31)SG and later releases, remove the old SPAN source configuration and reconfigure with the new queue names/IDs. For example:

```
Switch(config)# no monitor session n source cpu queue all rx
Switch(config)# monitor session n source cpu queue <new_Queue_Name>
```

  (CSCsc94802)

- If you initiate an scp copy from the console and it is delayed long enough to cause a timeout, the console is disconnected.

  Workarounds:

  - Use a different copy protocol.
  - Set a longer ssh timout.

  (CSCsc94317)

- To enable IP CEF if it is disabled by hardware exhaustion, use the **ip cef distributed** command.

  Workaround: None. (CSCsc11726)

- A bulk sync failure upon issuing the **switchport trunk encapsulation dot1q** command causes the standby supervisor engine to reload.

  Workaround: When this happens, the mismatched command list can be displayed on the active supervisor engine by issuing the **show issu config-sync failures mcl** command. The WS-X4418-GB module only supports the default dot1q encapsulation. The command mismatch can be fixed by removing the **switchport trunk encapsulation dot1q** subinterface command from each of the interfaces associated with the WS-X4418-GB module on the active supervisor engine and then rebooting the standby supervisor engine. Please verify that the above encapsulation command is

removed in the running configuration on the active supervisor engine for the above interfaces. The standby supervisor engine will now boot up into SSO mode. Save the configuration on the active supervisor engine after making the above changes. (CSCse86228)

- An IP redirect may not be sent out if the outgoing interface on a Catalyst 4500 series switch is an IP unnumbered port.

  This could occur for these reasons:

  - A packet requires an IP redirect to an IP unnumbered outgoing port within 3 minutes of booting the Catalyst 4500 series switch.
  - This is also seen if the switch administrator issues the **shutdown** and **no shutdown** commands on an outgoing interface that has IP unnumbered enabled. The switch receives packets that require redirection and the destination MAC address is already in ARP table.

  Workarounds:

  - Do not inject packets that require IP redirect sent out to an IP unnumbered port within 3 minutes of booting the Catalyst 4500 series switch.
  - Configure the correct default gateway on the host side. (CSCse75660)

- After configuring the **bgp dampening route-map bgp_damp** command on an active supervisor engine in SSO mode, the following system logs are seen on the console of the standby supervisor engine:

  ```
  00:10:34: %BGP-5-DAMPENING_HIGH_MAX_PENALTY: Maximum penalty (32473) is more than
  allowed maximum (20000). Dampening is OFF

  00:10:06: %BGP-5-DAMPENING_HIGH_MAX_PENALTY: Maximum penalty (32473) is more than
  allowed maximum 000). Dampening is OFF
  ```

  At this point, if you revert back to the **bgp dampening** command on the active supervisor engine, the new command is not synchronized with the standby supervisor engine.

  Workarounds: Issue the **no bgp dampening** command, then the **bgp dampening** command. (CSCse12485)

- On redundant systems working in SSO mode, a line-by-line (LBL) configuration sync error occurs between the active and standby supervisor engines when the administrator defaults the configuration for an interface configured with port security. The error causes the standby supervisor engine to reset if the config sync policy for the LBL errors is enforced using the **issu config-sync policy lbl prc** command.

  This problem only occurs if the interface configured with port security is in violation restrict mode (through the **switchport port-security violation restrict** command). Moreover, the interface must be in security violation state when you apply the **default interface** command.

  Workarounds: Bring the interface into shutdown mode before you apply the **default interface** command. (CSCsf30157)

- After an ISSU is performed on a WS-X4448-GB-SFP linecard running Cisco IOS Release 12.2(31)SGA, the output of the **show inventory** command does not display some of the 1000Base SFPs.

  Workaround: None. (CSCse43697)

- A bulk sync failure upon issuing the **switchport trunk encapsulation dot1q** command causes the standby supervisor engine to reload.

  Workaround: When this happens, the mismatched command list can be displayed on the active supervisor engine by issuing the **show issu config-sync failures mcl** command. The WS-X4418-GB module only supports the default dot1q encapsulation. The command mismatch can be fixed by

removing the **switchport trunk encapsulation dot1q** subinterface command from each of the interfaces associated with the WS-X4418-GB module on the active supervisor engine and then rebooting the standby supervisor engine. Please verify that the above encapsulation command is removed in the running configuration on the active supervisor engine for the above interfaces. The standby supervisor engine will now boot up into SSO mode. Save the configuration on the active supervisor engine after making the above changes. (CSCse86228)

- Configure a LACP channel in 802.1q tunnel mode between a Catalyst 4500 series switch and a Catalyst 6000 series switch, and apply the **redundancy reload shelf** command on the Catalyst 4500 series switch. This can cause link flaps on the EtherChannel interface when the Catalyst 4500 switch reloads.

  This happens to redundant Catalyst 4500 system, regardless the number of supervisor engines on the chassis. This problem applies to Cisco IOS Releases 12.2(31)SG and the 12.2(31)SGA maintenance train.

  Workaround: Shut off the EtherChannel interface and bring it up again. (CSCsf08912)

- Gigabit IP phones cannot process IEEE 802.1Q tagged CDP packets when 802.1X is configured on a voice VLAN. This causes the phone to continually register and de-register with Call Manager. 100 Mbps IP phones are not affected.

  Workaround: Remove the IEEE 802.1X configuration from the switch port. (CSCsg10135)

- When the same MAC addresses are learned and aged out on different VLANs, the Cat4k Mgmt LoPri process will cause CPU utilization to increase. This does not impact local data switching performance because the LoPri process is of low priority with limited access to the CPU.

  Workaround: None. (CSCsg76868)

- When trunk ports configured with VLANs associated with SVIs that are participating in a link state routing protocol come up after either a "no shutdown" or a supervisor engine switchover, log messages similar to the following may appear:

  ```
  Nov 19 05:11:02 MET: %IPC-5-WATERMARK: 1801 messages pending in rcv for
  the port CF : Standby(2020000.11) seat 2020000
  ```

  Such messages indicate that there are pending messages for active and standby supervisor engine inter-process communication. This condition does not impact switching traffic.

  Workaround: None. (CSCsg83090)

- When policing IEEE 802.1Q tagged non-IP traffic and calculating traffic conformance, the policer excludes the four bytes that constitute the 802.1Q tag even when you configure **qos account layer2 encapsulation**.

  Workaround: None. (CSCsg58526)

- In rare instances, the Supervisor Engine V-10GE might reload with the crashdump vector 0x00000100.

  Workaround: Monitor the switch and note the number of occurrences as well as any changes on the network prior to the reload. (CSCsh13318)

- When hardcoded duplex and speed settings are deleted after an interface shuts down, an "a-" is added to the duplex and speed in the output from the **show interface status** command.

  This does not impact performance.

  Workaround: Issue the **no shutdown** command. (CSCsg27395)

- When a transceiver is removed rapidly from one port and placed in another on the same chassis, occasionally a duplicate seeprom message is displayed and the port is not able to handle traffic.

Workaround: Remove the transceiver from the new port and place it in the old port. Once the SFP is recognized in the old port, remove it slowly and insert it in the new port. (CSCse34693).

- If the switch administrator unconfigures a loopback interface that is required by another configured protocol (i.e., BGP) on the primary supervisor engine, the standby supervisor engine will not reload successfully.

  Workaround: Remove all configurations that require the loopback interface before removing the loopback interface. (CSCsf06946)

- The RADIUS attribute 32 is not being sent to the RADIUS server for Cisco IOS Release 12.2(31)SG and beyond.

  Workaround: Downgrade to Cisco IOS Release 12.2(25)EWA10, if feasible. (CSCsi22041)

Resolved Caveats in Cisco IOS Release 12.2(31)SGA2

This section lists the resolved caveats in Release 12.2(31)SGA2:

- PoE switch ports configured with the **switchport voice vlan untagged** command cause ESMP communication between a supervisor engine and the PoE line card to cease. As a result, a warning message similar to the following will be printed to the console:

  ```
  %C4K_LINECARDMGMTPROTOCOL-4-ONGOINGTIMEOUTWARNING: Astro 2-2(Fa2/9-16) -
  consecutive management requests timed out.
  ```

  Workaround: Remove the switchport voice VLAN untagged configuration from the switch port. (CSCsg76374)

- If the ACL of an SVI interface is too large for the TCAM, ARP replies for the associated VLAN may not be processed.

  Workaround: Upgrade to Cisco IOS Release 12.2(31)SG or later and resize the TCAM with the **access-list hardware region balance** command to support the ACL Verify TCAM utilization with the **show platform hardware acl statistics utilization brief** command. (CSCsh50565)

- If two next-hop router interfaces are configured on a PBR route map, CPU utilization may be high if the first next-hop router interface is reachable via interface Null0:

  ```
  route-map PBR permit 10
    match ip address <ACL>
    set ip next-hop <NEXT-HOP 1> <NEXT-HOP 2>
  ```

  Workaround: Ensure that the next-hops *do not fall* under a route pointing to Null0. Such routes may have been entered either statically or by a routing protocol configured for summarization. (CSCsd88586)

- After a PC configured for 802.1X disconnects from an IP phone port through a Catalyst 4500 series switch, the port transitions to the guest VLAN. When a PC reconnects, the switch successfully authenticates the user but the user remains on the guest VLAN.

  Workarounds:

  1) Disable the 802.1X guest-vlan supplicant. The port will not remain in the guest VLAN state. It will transition out of the unauthorized state.

  2) Use dynamic VLAN assignment through the ACS to assign the correct VLAN to the port.

  (CSCsh47641)

- The Catalyst 4500 switch does not set the router alert bit in multicast group-specific queries.

  Workaround: Upgrade to Cisco IOS Release 12.2(31)SGA2. (CSCsi74467)

- On PoE line cards connected to IP phones or other PoE networking devices, you might see a S2W console warning message indicating that the POE devices are either not responding to polling from the supervisor or the devices are in an an error state. When this situation exists, PoE service may not work correctly. For instance, phones will not have power or power will be removed intermittently from some ports.

  This might happen for the following reasons:

  - There is a marginal and/or failing component(s) on the line card (requires RMA and EFA).
  - The hardware and software states are not synchronized due to a power *glitch* or to a reset of the -48V PoE.

  This situation occurs on Cisco IOS Release 12.2(31)SGA1 or lower (except for Cisco IOS Release 12.2(25)EWA10).

Note This situation does not exist on the WS-X4148-RJ45V.

Workaround: Download an image that supports PoE Health Monitoring such as Cisco IOS Release 12.2(37)SG, 12.2(31)SGA2, or 12.2(25)EWA10. These software images have code that will monitor, detect, and attempt to correct random S2W errors. Although this code does not prevent the problem, it will positively identify the issue and and reduce recovery time.

If you experience three HealthCheck warning messages within a week, RMA the line card immediately, and request an Engineer Failure Analysis (EFA) report. Perform the following debugging steps if your IP phone or PoE device fails:

Step 1 Determine if the IP phone works using other ports on the same line card.

Step 2 Determine if the same IP phone works using another line card(s) within the switch.

Step 3 Capture **show tech-support** and **show platform chassis module** *module*.

Step 4 Reset the linecard by issuing **hw-module module** *module* **reset** or by removing and reinserting the line card. Determine if the IP phone receives power from the switch.

Step 5 Capture **show tech-support** and **show platform chassis module** *module*.

Step 6 RMA the line card if the problem persists with RMA. Ask the TAC engineer to create an EFA.

(CSCsf26804)

- Windows XP PCs configured for machine authentication and PEAP may not receive an updated IP address from the DHCP server based on user credentials if the PC has been machine authenticated and can ping its previously assigned default gateway.

  Workaround: Upgrade to Cisco IOS Release 12.2(25)EWA10 or 12.2(31)SGA2. (CSCsi34572)

- The server side of the Secure Copy (SCP) implementation in Cisco IOS contains a vulnerability that allows any valid user, regardless of privilege level, to transfer files to and from an IOS device that is configured to be a Secure Copy server. This vulnerability could allow valid users to retrieve or write to any file on the device's filesystem, including the device's saved configuration. This configuration file may include passwords or other sensitive information.

  The Cisco IOS Secure Copy Server is an optional service that is disabled by default. Devices that are not specifically configured to enable the Cisco IOS Secure Copy Server service are not affected by this vulnerability.

  This vulnerability does not apply to the Cisco IOS Secure Copy Client feature.

This advisory is posted at

http://www.cisco.com/warp/public/707/cisco-sa-20070808-scp.shtml.

(CSCsc19259)

Open Caveats in Cisco IOS Release 12.2(31)SGA1

This section lists the open caveats in Cisco IOS Release 12.2(31)SGA1:

- When you enter the **access-list N permit host hostname** command on a redundant chassis operating in SSO mode, you might observe the following syslog messages. The command is not synchronized with the redundant supervisor engine, and keepalive warnings appear.

```
000099: Jul  9 01:22:36.478 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000100: Jul  9 01:22:46.534 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000101: Jul  9 01:22:56.566 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000102: Jul  9 01:23:06.598 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000103: Jul  9 01:23:16.642 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000104: Jul  9 01:23:26.682 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000105: Jul  9 01:23:36.721 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000106: Jul  9 01:23:46.777 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000107: Jul  9 01:23:56.793 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
```

  Workaround: When using the **access-list N permit host hostname** command, specify the IP address of the host rather than the hostname (CSCef67489)

- In rare instances, when you are using MAC ACL-based policers, the packet match counters in **show policy-map interface fa6/1** do not show the packets being matched:

```
clearwater#sh policy-map int
  FastEthernet3/2

   Service-policy output: p1

     Class-map: c1 (match-all)
       0 packets<--------It stays at '0' despite of traffic being received
       Match: access-group name fnacl21
       police: Per-interface
         Conform: 9426560 bytes Exceed: 16573440 bytes
```

  Workaround: Verify that the MAC addresses being transmitted through the system are learned.

  (CSCef01798)

- After an SSO switchover, you may receive a “PM-4-PORT_INCONSISTENT” error message on the switch console if you enter the **shutdown** command, then the **no shutdown** command on the port that is in UDLD error-disable state. This does not impact the switch; the port remains in UDLD error-disable state. Re-entering the **shutdown** command, then the **no shutdown** command on the same port will ensure that the error message does not re-appear.

  Workaround: None. (CSCeg48586)

- Occasionally, on redundant systems in SSO mode, applying the **apply cisco-phone $AVID vlan** *$VVID vlan* macro command to an interface connected to an IP phone may render the interface in the wrong state relative to the standby supervisor engine. This causes the SVI to be "down" after the switchover.

  Workaround: If the SVIs associated with the physical interface are down after the switchover, issue **shutdown** and **no shutdown** commands on the physical interface to bring up the SVIs. (CSCsb02308)

- When you issue the **ip http secure-server** command (or if the system reads it from the startup configuration), the device will check for the existence of a persistent self-signed certificate during boot up.

  – If such a certificate does not exist and the device's hostname and default_domain have been set, then a persistent self-signed certificate will be generated.

  – If such a certificate exists, the FQDN in the certificate is compared with the current device's hostname and default_domain. If either of these differs from the FQDN in the certificate, then the existing persistent self-signed certificate is replaced with a new one with the updated FQDN. Be aware that the existing keypair is used in the new certificate.

  On a switch that support redundancy, the generation of the self-signed certificate is performed independently on the active and the standby supervisor engines. So, the certificates differ. After switchover, the HTTP client that holds the old certificate can not connect to the HTTPS server.

  Workaround: Re-connect. (CSCsb11964)

- After upgrading to Cisco IOS 12.2(31)SG and later releases, some CPU queues configured as SPAN sources and saved in the startup configuration file do not function as they did in the older software release.

  This only impacts a switch that has any of the following queues are configured as SPAN source in releases prior to 12.2(31)SG and saved to startup-config. The SPAN destination would not get the same traffic after upgrading to 12.2(31)SG.

QueueID	Old QueueName	New QueueName
5	control-packet	control-packet
6	rpf-failure	control-packet
7	adj-same-if	control-packet
8	<unused queue>	control-packet
11	<unused queue>	adj-same-if
13	acl input log	rfp-failure
14	acl input forward	acl input log

  Workaround: After upgrading to 12.2(31)SG and later releases, remove the old SPAN source configuration and reconfigure with the new queue names/IDs. For example:

```
Switch(config)# no monitor session n source cpu queue all rx
Switch(config)# monitor session n source cpu queue <new_Queue_Name>
```

  (CSCsc94802)

- If you initiate a scp copy from the console and it is delayed long enough to cause a timeout, the console is disconnected.

  Workarounds:

  - Use a different copy protocol.
  - Set a longer ssh timout.

  (CSCsc94317)

- Occasionally, on redundant systems in SSO mode, applying the **apply cisco-phone $AVID vlan** *$VVID vlan* macro command to an interface connected to an IP phone may render the interface in the wrong state relative to the standby supervisor engine. This causes the SVI to be "down" after the switchover.

  Workaround: If the SVIs associated with the physical interface are down after the switchover, issue **shutdown** and **no shutdown** commands on the physical interface to bring up the SVIs. (CSCsb02308)

- To enable IP CEF if it is disabled by hardware exhaustion, use the **ip cef distributed** command.

  Workaround: None. (CSCsc11726)

- A bulk sync failure upon issuing the **switchport trunk encapsulation dot1q** command causes the standby supervisor engine to reload.

  Workaround: When this happens, the mismatched command list can be displayed on the active supervisor engine by issuing the **show issu config-sync failures mcl** command. The WS-X4418-GB module only supports the default dot1q encapsulation. The command mismatch can be fixed by removing the **switchport trunk encapsulation dot1q** subinterface command from each of the interfaces associated with the WS-X4418-GB module on the active supervisor engine and then rebooting the standby supervisor engine. Please verify that the above encapsulation command is removed in the running configuration on the active supervisor engine for the above interfaces. The standby supervisor engine will now boot up into SSO mode. Save the configuration on the active supervisor engine after making the above changes. (CSCse86228)

- An IP redirect may not be sent out if the outgoing interface on a Catalyst 4500 series switch is an IP unnumbered port.

  This could occur for these reasons:

  - A packet requires an IP redirect to an IP unnumbered outgoing port within 3 minutes of booting the Catalyst 4500 series switch.
  - This is also seen if the switch administrator issues the **shutdown** and **no shutdown** commands on an outgoing interface that has IP unnumbered enabled. The switch receives packets that require redirection and the destination MAC address is already in ARP table.

  Workarounds:

  - Do not inject packets that require IP redirect sent out to an IP unnumbered port within 3 minutes of booting the Catalyst 4500 series switch.
  - Configure the correct default gateway on the host side. (CSCse75660)

- After configuring the **bgp dampening route-map bgp_damp** command on an active supervisor engine in SSO mode, the following system logs are seen on the console of the standby supervisor engine:

```
00:10:34: %BGP-5-DAMPENING_HIGH_MAX_PENALTY: Maximum penalty (32473) is more than
allowed maximum (20000). Dampening is OFF

00:10:06: %BGP-5-DAMPENING_HIGH_MAX_PENALTY: Maximum penalty (32473) is more than
allowed maximum 000). Dampening is OFF
```

  At this point, if you revert back to the **bgp dampening** command on the active supervisor engine, the new command is not synchronized with the standby supervisor engine.

Workarounds: Issue the **no bgp dampening** command, then the **bgp dampening** command. (CSCse12485)

- On redundant systems working in SSO mode, a line-by-line (LBL) configuration sync error occurs between the active and standby supervisor engines when the administrator defaults the configuration for an interface configured with port security. The error causes the standby supervisor engine to reset if the config sync policy for the LBL errors is enforced using the **issu config-sync policy lbl prc** command.

  This problem only occurs if the interface configured with port security is in violation restrict mode (through the **switchport port-security violation restrict** command). Moreover, the interface must be in security violation state when you apply the **default interface** command.

  Workarounds: Bring the interface into shutdown mode before you apply the **default interface** command. (CSCsf30157)

- After an ISSU is performed on a WS-X4448-GB-SFP linecard running Cisco IOS Release 12.2(31)SGA, the output of the **show inventory** command does not display some of the 1000Base SFPs.

  Workaround: None. (CSCse43697)

- A bulk sync failure upon issuing the **switchport trunk encapsulation dot1q** command causes the standby supervisor engine to reload.

  Workaround: When this happens, the mismatched command list can be displayed on the active supervisor engine by issuing the **show issu config-sync failures mcl** command. The WS-X4418-GB module only supports the default dot1q encapsulation. The command mismatch can be fixed by removing the **switchport trunk encapsulation dot1q** subinterface command from each of the interfaces associated with the WS-X4418-GB module on the active supervisor engine and then rebooting the standby supervisor engine. Please verify that the above encapsulation command is removed in the running configuration on the active supervisor engine for the above interfaces. The standby supervisor engine will now boot up into SSO mode. Save the configuration on the active supervisor engine after making the above changes. (CSCse86228)

- Configure a LACP channel in 802.1q tunnel mode between a Catalyst 4500 series switch and a Catalyst 6000 series switch, and apply the **redundancy reload shelf** command on the Catalyst 4500 series switch. This can cause link flaps on the EtherChannel interface when the Catalyst 4500 switch reloads.

  This happens to redundant Catalyst 4500 system, regardless the number of supervisor engines on the chassis. This problem applies to Cisco IOS Releases 12.2(31)SG and the 12.2(31)SGA maintenance train.

  Workaround: Shut off the EtherChannel interface and bring it up again. (CSCsf08912)

- Gigabit IP phones cannot process IEEE 802.1Q tagged CDP packets when 802.1X is configured on a voice VLAN. This causes the phone to continually register and de-register with Call Manager. 100 Mbps IP phones are not affected.

  Workaround: Remove the IEEE 802.1X configuration from the switch port. (CSCsg10135)

- PoE switch ports configured with the **switchport voice VLAN untagged** command cause ESMP communication between a supervisor engine and the PoE line card to cease. As a result, a warning message similar to the following will be printed to the console:

  ```
  %C4K_LINECARDMGMTPROTOCOL-4-ONGOINGTIMEOUTWARNING: Astro 2-2(Fa2/9-16) -
  consecutive management requests timed out.
  ```

  Workaround: Remove the switchport voice VLAN untagged configuration from the switch port. (CSCsg76374)

- When the same MAC addresses are learned and aged out on different VLANs, the Cat4k Mgmt LoPri process will cause CPU utilization to increase. This does not impact local data switching performance because the LoPri process is of low priority with limited access to the CPU.

  Workaround: None. (CSCsg76868)

- When trunk ports configured with VLANs associated with SVIs that are participating in a link state routing protocol come up after either a "no shutdown" or a supervisor engine switchover, log messages similar to the following may appear:

  ```
  Nov 19 05:11:02 MET: %IPC-5-WATERMARK: 1801 messages pending in rcv for
  the port CF : Standby(2020000.11) seat 2020000
  ```

  Such messages indicate that there are pending messages for active and standby supervisor engine inter-process communication. This condition does not impact switching traffic.

  Workaround: None. (CSCsg83090)

- When policing IEEE 802.1Q tagged non-IP traffic and calculating traffic conformance, the policer excludes the four bytes that constitute the 802.1Q tag even when you configure **qos account layer2 encapsulation**.

  Workaround: None. (CSCsg58526)

- In rare instances, the Supervisor Engine V-10GE might reload with the crashdump vector 0x00000100.

  Workaround: Monitor the switch and note the number of occurrences as well as any changes on the network prior to the reload. (CSCsh13318)

- When hardcoded duplex and speed settings are deleted after an interface shuts down, an "a-" is added to the duplex and speed in the output from the **show interface status** command.

  This does not impact performance.

  Workaround: Issue the **no shutdown** command. (CSCsg27395)

- If the ACL of an SVI interface is too large for the TCAM, ARP replies for the associated VLAN may not be processed.

  Workaround: Upgrade to Cisco IOS Release 12.2(31)SG or later and resize the TCAM with the **access-list hardware region balance** command to support the ACL Verify TCAM utilization with the **show platform hardware acl statistics utilization brief** command. (CSCsh50565)

- When a transceiver is removed rapidly from one port and placed in another on the same chassis, occasionally a duplicate seeprom message is displayed and the port is not able to handle traffic.

  Workaround: Remove the transceiver from the new port and place it in the old port. Once the SFP is recognized in the old port, remove it slowly and insert it in the new port. (CSCse34693).

- The RADIUS attribute 32 is not being sent to the RADIUS server for Cisco IOS Release 12.2(31)SG and beyond.

  Workaround: Downgrade to Cisco IOS Release 12.2(25)EWA10, if feasible. (CSCsi22041)

Resolved Caveats in Cisco IOS Release 12.2(31)SGA1

This section lists the resolved caveats in Release 12.2(31)SGA1:

- If port security is enabled on a PVLAN isolated trunk port, Layer 3 connectivity to hosts connected via that port may be unreachable.

  Workaround: None. (CSCsg11229)

- The Catalyst 4500 switch running 12.2(31)SG and configured for 802.1X may reset after displaying the following console messages while switching EAP packets:

```
Jul 27 08:14:36: %SYS-2-FREEFREE: Attempted to free unassigned memory at 1A35ACA8,
alloc 10355D60, dealloc 103594B4
-Traceback= 10FAC5A8 1035A150 1035A30C 105A7A7C 1059F3A8
Jul 27 08:14:36: %SYS-6-MTRACE: mallocfree: addr, pc
 1A35ACA8,1035A14C 195FECAC,103592E8 1A1A97D4,60000010 1A1A9780,10359134
 1A084698,10249D60 1A16F008,10355724 1A0FBE24,10359098 127B42B8,600000F8
Jul 27 08:14:36: %SYS-6-MTRACE: mallocfree: addr, pc
 127B3E80,103594C4 1A35AF4C,600000F2 1A35ACA8,103594B4 1A1F9F6C,1083D310
 127B16CC,6000005E 127B11A8,50000208 127B15E0,1083D300 1A17258C,1083D2E4
Jul 27 08:14:36: %SYS-6-BLKINFO: Attempt to free a block that is in use blk 1A35AC80,
 words 580, alloc 10355D60, Free, dealloc 103594B4, rfcnt 0
-Traceback= 10F96808 10FAC5B8 1035A150 1035A30C 105A7A7C 1059F3A8
Jul 27 08:14:36: %SYS-6-MEMDUMP: 0x1A35AC80: 0xAB1234CD 0x390000 0x1983C854 0x11F30330
Jul 27 08:14:36: %SYS-6-MEMDUMP: 0x1A35AC90: 0x10355D60 0x1A35B130 0x1A35AC38 0x244
```

  Workaround: Upgrade to Cisco IOS Release 12.2(31)SGA1 or later. (CSCsf09339)

- When you configure portchannels and portchannel members with non-autonegotiating speed and duplex settings, configuration syncs to the standby supervisor engine might fail, causing the switch to fallback to the RPR mode.

  Workarounds: None. (CSCsg62994)

- If you configure ISIS/IPv6 with the **passive-interface default** and **no passive-interface <interface>** commands, ISIS IIH advertisements will be sent from such interfaces without the local IPv6 address, preventing the formation of adjacencies.

  Workaround: Remove **passive-interface** commands from the **router isis** configuration. (CSCei21664)

- GARP-based protocol packets leak through an STP block, potentially leading to a GARP storm in a redundant topology.

  Workaround: Use Hardware Control Plane Policing (CoPP) to police GARP packets. (CSCsg08775)

- Configuring an ACL on a port configured with the **switchport access vlan dynamic** command will restart the Catalyst 4500 series switch.

  This issue impacts Catalyst 4500 series switches running IOS releases including and earlier than 12.2(31)SGA and 12.2(25)EWA6.

  Workaround: None. (CSCsg03745)

- The HSRP Active-Router does not respond to ARP requests for the virtual IP (VIP) address. Issuing **clear arp** on the HSRP standby router does not resolve the problem. This problem may occur when the same HSRP VIP address exists on different HSRP groups on different routers.

  Workaround: Issue the **no standby redirects** command. (CSCsd80754)

- While upgrading the switch using the steps described in the ISSU process, issuing the **issu runversion** command causes the active supervisor engine to report a bulk sync failure as the standby supervisor engine boots up due to the mismatch command (MCL). The MCL errors are reported for PoE interfaces configured with the **power inline static max** command. The standby automatically resets and comes back in RPR mode.

  The is error occurs only with PoE interfaces when you configure **static max allowed inline power** on WS-X4506-GB-T line cards.

Workaround: Remove the configuration lines reported in the MCL list from the running config on the active supervisor engine, and then rebooting the standby engine. Once the standby supervisor engine is up and the switch reaches the STANDBY HOT state, reconfigure the original **power inline static max** command. (CSCse57813)

- When you remove the **radius-server source-ports 1645-1646** default command, the switch sends the RADIUS requests with the wrong source port, causing failed authentication attempts.

  Reloading the switch will solve the problem. Upon boot-up, **radius-server source-ports 1645-1646** will be in the running-config and communication with the RADIUS server will resume

  Workaround: Ensure the **radius-server source-ports 1645-1646** command is configured. (CSCsh22161)

- Spurious memory accesses may occur when OSPF routing is configured and UDP traffic is flooded.

  Workaround: None. (CSCsd11631)

- When a switch port is disabled and enabled, the adjacent switch port may drop up to 20 packets.

  Workaround: None. (CSCsg02099)

- In a Catalyst 4500 series switch, ports on WS-X4418-GB may come up in half-duplex after the link is reset. This symptom is accompanied by logging duplex mismatch messages.

  This problem has been seen with connections between WS-X4418-GB module and the Catalyst 3550, Catalyst 3560, and Catalyst 3500xl series switches.

  Workaround: Issue the **shut/no shut** command on the WS-X4418-GB interface. (CSCsg21514)

- Occasionally, the link between a WS-X4548-GB-RJ45 and a WS-C3560-24PS running Cisco IOS Release 12.2(25)SEE might not come up after you reload the Catalyst 4500 series switch. This does not occur when the WS-C3560-24PS is reloaded.

  Workaround: Perform a **shut/no shut** on the interface. (CSCsd90837)

- QoS markings are not retained when using per-port per-VLAN QoS and IP Source Guard.

  Workaround: Disable and enable QoS. (CSCsg75348)

- The switch may reset after a PVLAN trunk port receives a high number of IGMP report messages.

  Workaround: Disable the PVLAN trunk port. (CSCsg46891)

- A switch configured in Rapid PVST spanning tree mode will not automatically recover an interface that was placed into ROOT_Inc state by ROOT guard.

  Workaround: Bounce any interface on the 4500 switch causing a spanning tree topology change. (CSCsc95631)

- A tftp client that attempts to transfer a file from an IOS device configured as a tftp server, and which is denied by an ACL, receives a result that depends on whether the file is being offered for download. This may allow a third party to enumerate which files are available for download.

  Workaround: Apply one of the following:

  1. Interface ACL - Configure and attach an access list to every active router interface configured for IP packet processing. Once enabled, the tftp server in IOS listens by default on all interfaces enabled for IP processing. So, the access list needs to deny traffic to every IP address assigned to an active router interface.

  2. Control Plane Policing - Configure and apply a CoPP policy.

Note CoPP is only available on certain platforms and IOS release trains. Additional information on the configuration and use of the CoPP feature can be found at the following URL: http://www.cisco.com/en/US/products/sw/iosswrel/ps1838/products_white_paper09186a00802 11f39.shtml

3. Infrastructure ACLs (iACL) - Although it is often difficult to block traffic transiting your network, it is possible to identify traffic that should never be allowed to target your infrastructure devices and to block that traffic at the border of your network. Infrastructure ACLs are considered a network security best practice and should be considered as a long-term addition to good network security as well as a workaround for this specific vulnerability. The white paper entitled "Protecting Your Core: Infrastructure Protection Access Control Lists" presents guidelines and recommended deployment techniques for iACLs (:http://www.cisco.com/warp/public/707/iacl.html).

4. Receive Access Lists (rACLs) - The rACLs protect a device from harmful traffic before the traffic can impact the route processor. rACLs are considered a network security best practice, and should be considered as a long-term addition to good network security, as well as a workaround for this specific vulnerability. The CPU load is distributed to the line card processors and helps mitigate load on the main route processor. The white paper entitled "GSR: Receive Access Control Lists" will help identify and allow legitimate traffic to your device and deny all unwanted packets (:http://www.cisco.com/warp/public/707/racl.html). (CSCse04560)

Note The suggested workarounds are an "all or nothing" solution. While the tftp-server feature in IOS allows per-file ACLs to be attached to every file being offered for download, the suggested workarounds are global. They will either prevent or allow access to all files that are being shared. You should apply a workaround in addition to the existing per-file ACLs, instead of replacing them.

- Test and debug commands are not available in cryptographic images.

  Workaround: None. (CSCse61081)

- A Catalyst 4500 series switch running Cisco IOS Release 12.2(25)EWA6 might drop an ARP request. The switch cannot resolve the MAC address of connected devices.

  This problem is not seen with Cisco IOS Releases 12.2(25)EWA4 and 12.2(25)EWA5.

  Workaround: None. (CSCsf16422)

- When your DHCP address lease time is not updated on a switch configured with IP Source Guard, you cannot renew your DHCP IP addresses. Your non-DHCP traffic is dropped and the following error message is logged:

  ```
  %IP_SOURCE_GUARD-4-IP_SOURCE_GUARD_DENY_PACKET: IP Source Guard detects and drops
  illegal traffic
  ```

  Workaround: Disable and enable the affected switch ports. (CSCsd65833)

- When you configure a switch with an IEEE 802.1X Failed Authentication VLAN and IEEE 802.1X supplicants use tunneled EAP methods such as PEAP and EAP-TLS for authentication, the switch attempts to send an EAP Success message on the third consecutive failed authentication attempt rather than an EAP Failure message. This results in erratic supplicant and network behavior.

  Workaround: Either do not use tunneled EAP methods or disable the authentication failed VLAN. (CSCse71105)

- When the VTP configuration revision is higher than 0x7FFFFFFF (2147483647), the configuration revision displays in the output of the **show vtp status** command as a negative number.

Workaround: Reset the VTP domain name for all switches in the domain. (CSCse40078)

- While upgrading the Catalyst 4500 series switch with ISSU, issuing the **issu runversion** command as the standby supervisor engine boots causes the active supervisor engine to report a bulk sync failure due to a mismatch command (MCL). The MCL errors are reported only for PoE interfaces on WS-X4506-GB-T line cards configured for inline power with the **power inline static max** command. The standby supervisor engine automatically resets and re-boots in RPR mode.

  Workarounds: Remove the configuration lines reported in the MCL list from the running config on the active supervisor engine. Then, reboot the standby supervisor engine. Once the standby supervisor engine has booted and Catalyst 4500 series switch is in a STANDBY HOT state, reconfigure the original **power inline static max** command. (CSCse57813)

- Cisco Catalyst 6000, 6500 series and Cisco 7600 series that have a Network Analysis Module installed are vulnerable to an attack, which could allow an attacker to gain complete control of the system. Only Cisco Catalyst systems that have a NAM on them are affected. This vulnerability affects systems that run Cisco IOS or Catalyst Operating System (CatOS).

  Cisco has made free software available to address this vulnerability for affected customers.

  A Cisco Security Advisory for this vulnerability is posted at http://www.cisco.com/warp/public/707/cisco-sa-20070228-nam.shtml.

  (CSCsd75273)

- Cisco Catalyst 6000, 6500 series and Cisco 7600 series that have a Network Analysis Module installed are vulnerable to an attack, which could allow an attacker to gain complete control of the system. Only Cisco Catalyst systems that have a NAM on them are affected. This vulnerability affects systems that run Cisco IOS or Catalyst Operating System (CatOS).

  Cisco has made free software available to address this vulnerability for affected customers.

  A Cisco Security Advisory for this vulnerability is posted at http://www.cisco.com/warp/public/707/cisco-sa-20070228-nam.shtml.

  (CSCse52951)

- A vulnerability has been discovered in a third party cryptographic library which is used by a number of Cisco products. This vulnerability may be triggered when a malformed Abstract Syntax Notation One (ASN.1) object is parsed. Due to the nature of the vulnerability it may be possible, in some cases, to trigger this vulnerability without a valid certificate or valid application-layer credentials (such as a valid username or password).

  Successful repeated exploitation of any of these vulnerabilities may lead to a sustained Denial-of-Service (DoS); however, vulnerabilities are not known to compromise either the confidentiality or integrity of the data or the device. These vulnerabilities are not believed to allow an attacker will not be able to decrypt any previously encrypted information.

  The vulnerable cryptographic library is used in the following Cisco products:

  - Cisco IOS, documented as Cisco bug ID CSCsd85587
  - Cisco IOS XR, documented as Cisco bug ID CSCsg41084
  - Cisco PIX and ASA Security Appliances, documented as Cisco bug ID CSCse91999
  - Cisco Unified CallManager, documented as Cisco bug ID CSCsg44348
  - Cisco Firewall Service Module (FWSM)

  This vulnerability is also being tracked by CERT/CC as VU#754281.

  Cisco has made free software available to address this vulnerability for affected customers. There are no workarounds available to mitigate the effects of the vulnerability.

This advisory is posted at http://www.cisco.com/warp/public/707/cisco-sa-20070522-crypto.shtml.

Note Another related advisory is posted together with this Advisory. It also describes vulnerabilities related to cryptography that affect Cisco IOS. A combined software table for Cisco IOS only is available at http://www.cisco.com/warp/public/707/cisco-sa-20070522-cry-bundle.shtml and can be used to choose a software release which fixes all security vulnerabilities published as of May 22, 2007. The related advisory is published at http://www.cisco.com/warp/public/707/cisco-sa-20070522-SSL.shtml.

(CSCsd85587)

Open Caveats in Cisco IOS Release 12.2(31)SGA

This section lists the open caveats in Cisco IOS Release 12.2(31)SGA:

- When you enter the **access-list N permit host hostname** command on a redundant chassis operating in SSO mode, you might observe the following syslog messages. The command is not synchronized with the redundant supervisor engine, and keepalive warnings appear.

```
000099: Jul  9 01:22:36.478 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000100: Jul  9 01:22:46.534 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000101: Jul  9 01:22:56.566 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000102: Jul  9 01:23:06.598 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000103: Jul  9 01:23:16.642 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000104: Jul  9 01:23:26.682 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000105: Jul  9 01:23:36.721 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000106: Jul  9 01:23:46.777 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000107: Jul  9 01:23:56.793 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
```

  Workaround: When using the **access-list N permit host hostname** command, specify the IP address of the host rather than the hostname (CSCef67489)

- In rare instances, when you are using MAC ACL-based policers, the packet match counters in **show policy-map interface fa6/1** do not show the packets being matched:

```
clearwater#sh policy-map int
  FastEthernet3/2

   Service-policy output: p1

     Class-map: c1 (match-all)
       0 packets<--------It stays at '0' despite of traffic being received
       Match: access-group name fnacl21
       police: Per-interface
         Conform: 9426560 bytes Exceed: 16573440 bytes
```

  Workaround: Verify that the MAC addresses being transmitted through the system are learned.

  (CSCef01798)

- After an SSO switchover, you may receive a "PM-4-PORT_INCONSISTENT" error message on the switch console if you enter the **shutdown** command, then the **no shutdown** command on the port that is in UDLD error-disable state. This does not impact the switch; the port remains in UDLD error-disable state. Re-entering the **shutdown** command, then the **no shutdown** command on the same port will ensure that the error message does not re-appear.

  Workaround: None. (CSCeg48586)

- Occasionally, on redundant systems in SSO mode, applying the **apply cisco-phone $AVID vlan** *$VVID vlan* macro command to an interface connected to an IP phone may render the interface in the wrong state relative to the standby supervisor engine. This causes the SVI to be "down" after the switchover.

  Workaround: If the SVIs associated with the physical interface are down after the switchover, issue **shutdown** and **no shutdown** commands on the physical interface to bring up the SVIs. (CSCsb02308)

- When you issue the **ip http secure-server** command (or if the system reads it from the startup configuration), the device will check for the existence of a persistent self-signed certificate during boot up.
  - If such a certificate does not exist and the device's hostname and default_domain have been set, then a persistent self-signed certificate will be generated.
  - If such a certificate exists, the FQDN in the certificate is compared with the current device's hostname and default_domain. If either of these differs from the FQDN in the certificate, then the existing persistent self-signed certificate is replaced with a new one with the updated FQDN. Be aware that the existing keypair is used in the new certificate.

  On a switch that support redundancy, the generation of the self-signed certificate is performed independently on the active and the standby supervisor engines. So, the certificates differ. After switchover, the HTTP client that holds the old certificate can not connect to the HTTPS server.

  Workaround: Re-connect. (CSCsb11964)

- If you modify policers with a large number of VLAN tags on a Catalyst 4507R or a 4510R chassis with dual supervisor engines operating in SSO mode during substantial CPU bound traffic, the following message appears:

  ```
  %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync config-changed command to standby
  ```

  Workaround: Reset the standby supervisor by entering the **redundancy reload peer** command. This command synchronizes the standby supervisor configuration with the active supervisor.

- After upgrading to Cisco IOS 12.2(31)SG and later releases, some CPU queues configured as SPAN sources and saved in the startup configuration file do not function as they did in the older software release.

  This only impacts a switch that has any of the following queues are configured as SPAN source in releases prior to 12.2(31)SG and saved to startup-config. The SPAN destination would not get the same traffic after upgrading to 12.2(31)SG.

QueueID	Old QueueName	New QueueName
5	control-packet	control-packet
6	rpf-failure	control-packet
7	adj-same-if	control-packet
8	<unused queue>	control-packet

QueueID	Old QueueName	New QueueName
11	<unused queue>	adj-same-if
13	acl input log	rfp-failure
14	acl input forward	acl input log

Workaround: After upgrading to 12.2(31)SG and later releases, remove the old SPAN source configuration and reconfigure with the new queue names/IDs. For example:

```
Switch(config)# no monitor session n source cpu queue all rx
Switch(config)# monitor session n source cpu queue <new_Queue_Name>
```

(CSCsc94802)

- If you initiate a scp copy from the console and it is delayed long enough to cause a timeout, the console is disconnected.

  Workarounds:

  - Use a different copy protocol.
  - Set a longer ssh timout.

  (CSCsc94317)

- Occasionally, on redundant systems in SSO mode, applying the **apply cisco-phone $AVID vlan** *$VVID vlan* macro command to an interface connected to an IP phone may render the interface in the wrong state relative to the standby supervisor engine. This causes the SVI to be "down" after the switchover.

  Workaround: If the SVIs associated with the physical interface are down after the switchover, issue **shutdown** and **no shutdown** commands on the physical interface to bring up the SVIs. (CSCsb02308)

- To enable IP CEF if it is disabled by hardware exhaustion, use the **ip cef distributed** command.

  Workaround: None. (CSCsc11726)

- When you do not save the running configuration on the active supervisor engine before a Stateful Switchover occurs due to the failure of the active supervisor engine, the following error message is observed:

  ```
  00:00:26: %PM-4-PORT_INCONSISTENT: Port Gi3/1 is inconsistent: IDB state down (set
  00:00:02 ago), link: up (00:00:02 ago)
  ```

  Traffic loss is observed for about 500 ms.

  Workaround: Save your changes to the running configuration to avoid the error log and the loss of traffic during a Stateful Switchover.

- A bulk sync failure upon issuing the **switchport trunk encapsulation dot1q** command causes the standby supervisor engine to reload.

  Workaround: When this happens, the mismatched command list can be displayed on the active supervisor engine by issuing the **show issu config-sync failures mcl** command. The WS-X4418-GB module only supports the default dot1q encapsulation. The command mismatch can be fixed by removing the **switchport trunk encapsulation dot1q** subinterface command from each of the interfaces associated with the WS-X4418-GB module on the active supervisor engine and then rebooting the standby supervisor engine. Please verify that the above encapsulation command is removed in the running configuration on the active supervisor engine for the above interfaces. The standby supervisor engine will now boot up into SSO mode. Save the configuration on the active supervisor engine after making the above changes. (CSCse86228)

- An IP redirect may not be sent out if the outgoing interface on a Catalyst 4500 series switch is an IP unnumbered port.

  This could occur for these reasons:

  – A packet requires an IP redirect to an IP unnumbered outgoing port within 3 minutes of booting the Catalyst 4500 series switch.

  – This is also seen if the switch administrator issues the **shutdown** and **no shutdown** commands on an outgoing interface that has IP unnumbered enabled. The switch receives packets that require redirection and the destination MAC address is already in ARP table.

  Workarounds:

  – Do not inject packets that require IP redirect sent out to an IP unnumbered port within 3 minutes of booting the Catalyst 4500 series switch.

  – Configure the correct default gateway on the host side. (CSCse75660)

- After configuring the **bgp dampening route-map bgp_damp** command on an active supervisor engine in SSO mode, the following system logs are seen on the console of the standby supervisor engine:

  ```
  00:10:34: %BGP-5-DAMPENING_HIGH_MAX_PENALTY: Maximum penalty (32473) is more than
  allowed maximum (20000). Dampening is OFF

  00:10:06: %BGP-5-DAMPENING_HIGH_MAX_PENALTY: Maximum penalty (32473) is more than
  allowed maximum 000). Dampening is OFF
  ```

  At this point, if you revert back to the **bgp dampening** command on the active supervisor engine, the new command is not synchronized with the standby supervisor engine.

  Workarounds: Issue the **no bgd dampening** command, then the **bgp dampening** command. (CSCse12485)

- While upgrading the Catalyst 4500 series switch with ISSU, issuing the **issu runversion** command as the standby supervisor engine boots causes the active supervisor engine to report a bulk sync failure due to a mismatch command (MCL). The MCL errors are reported only for PoE interfaces on WS-X4506-GB-T line cards configured for inline power with the **power inline static max** command. The standby supervisor engine automatically resets and re-boots in RPR mode.

  Workarounds: Remove the configuration lines reported in the MCL list from the running config on the active supervisor engine. Then, reboot the standby supervisor engine. Once the standby supervisor engine has booted and Catalyst 4500 series switch is in a STANDBY HOT state, reconfigure the original **power inline static max** command. (CSCse57813)

- On redundant systems working in SSO mode, a line-by-line (LBL) configuration sync error occurs between the active and standby supervisor engines when the administrator defaults the configuration for an interface configured with port security. The error causes the standby supervisor engine to reset if the config sync policy for the LBL errors is enforced using the **issu config-sync policy lbl prc** command.

  This problem only occurs if the interface configured with port security is in violation restrict mode (through the **switchport port-security violation restrict** command). Moreover, the interface must be in security violation state when you apply the **default interface** command.

  Workarounds: Bring the interface into shutdown mode before you apply the **default interface** command. (CSCsf30157)

- After an ISSU is performed on a WS-X4448-GB-SFP linecard running Cisco IOS Release 12.2(31)SGA, the output of the **show inventory** command does not display some of the 1000Base SFPs .

Workarounds: None. (CSCse43697)

- The RADIUS attribute 32 is not being sent to the RADIUS server for Cisco IOS Release 12.2(31)SG and beyond.

  Workaround: Downgrade to Cisco IOS Release 12.2(25)EWA10, if feasible. (CSCsi22041)

Resolved Caveats in Cisco IOS Release 12.2(31)SGA

This section lists the resolved caveats in Release 12.2(31)SGA:

- When running Cisco IOS Release 12.2(25)EWA6 on a Catalyst 4948 series switch, or the Catalyst 4013+TS supervisor engine and the 4306-GB-T linecard, the following problems may be seen on RJ45 ports only:
  - When sending packets of size greater than 6656 bytes, the ports cannot sustain the linerate when operating at 1Gbps. However, they can sustain the linerate for packet sizes less than or equal to 6656 bytes when operating at 1Gbps.
  - Occasionally, the TxQueue's associated with the RJ45 ports may get stuck when packets greater than 6656 bytes and the port is operating in either 10Mbps or 100Mbps or 1Gbps. You would see messages like the following:

    ```
    Aug  1 04:46:01 CDT: %C4K_HWPORTMAN-4-BLOCKEDTXQUEUE: Blocked transmit queue
    HwTxQId1 on Switch Phyport Gi1/35, count=1784
    Aug  1 04:46:12 CDT: Current Freelist count 5629. Fell below threshold 601 times
    consecutively
    Aug  1 04:46:42 CDT: Current Freelist count 5629. Fell below threshold 1202 times
    consecutively
    ```

  Workaround: Upgrade to Cisco IOS Release 12.2(25)EWA8, 12.2(31)SGA, or 12.2(37)SG. (CSCse29295)

- When the standby supervisor engine is not synced with the active supervisor engine that is configured for ISSU during an IOS upgrade of IOS, the following messages appear:

  ```
  %IDBINDEX_SYNC-3-IPC_ERR:

  ifindex_sync_standby_port : no such port.
  -Process= "rf task", ipl= 0, pid= 54

  -Traceback=
  ```

  Workaround: None. (CSCse31818)

- A Catalyst 4500 series switch clears the mac-add-table notif counters when the feature is disabled.

  Workaround: Re-connect. (CSCsc31540)

- Symptoms: A router may crash if it receives a packet with a specific crafted IP option as detailed in Cisco Security Advisory: Crafted IP Option Vulnerability:

  http://www.cisco.com/warp/public/707/cisco-sa-20070124-crafted-ip-option.shtml

  Conditions: This DDTS resolves a symptom of CSCec71950. Cisco IOS with this specific DDTS are not at risk of crash if CSCec71950 has been resolved in the software.

  Workaround: Cisco IOS versions with the fix for CSCec71950 are not at risk for this issue and no workaround is required. If CSCec71950 is not resolved, see the following Cisco Security Advisory: Crafted IP Option Vulnerability for workaround information:

  http://www.cisco.com/warp/public/707/cisco-sa-20070124-crafted-ip-option.shtml

(CSCek26492)

- The Cisco IOS Transmission Control Protocol (TCP) listener in certain versions of Cisco IOS software is vulnerable to a remotely-exploitable memory leak that may lead to a denial of service condition.

  This vulnerability only applies to traffic destined to the Cisco IOS device. Traffic transiting the Cisco IOS device will not trigger this vulnerability.

  Cisco has made free software available to address this vulnerability for affected customers.

  This issue is documented as Cisco bug ID CSCek37177.

  There are workarounds available to mitigate the effects of the vulnerability.

  This advisory is posted at
  http://www.cisco.com/warp/public/707/cisco-sa-20070124-crafted-tcp.shtml

  (CSCek37177)

- Processing a specially crafted IPv6 Type 0 Routing header can crash a device running Cisco IOS software. This vulnerability does not affect IPv6 Type 2 Routing header which is used in mobile IPv6. IPv6 is not enabled by default in Cisco IOS.

  Cisco has made free software available to address this vulnerability for affected customers.

  There are workarounds available to mitigate the effects of the vulnerability. The workaround depends on if Mobile IPv6 is used and what version on Cisco IOS is being currently used.

  This advisory is posted at
  http://www.cisco.com/warp/public/707/cisco-sa-20070124-IOS-IPv6.shtml

  (CSCsd58381)

- A Cisco router may drop a TCP connection to a remote router.

  When an active TCP connection is established and when data is sent by the Cisco router to the remote router at a much faster rate than the remote router can handle, the router might advertise a zero window. So, when the router reads the data, the window is re-opened and the new window is advertised. When this situation occurs, and when the Cisco router has saved data to TCP in order to be send to the remote router, the Cisco router may drop the TCP connection.

  Workaround: Increase the window size on both ends. On the Cisco router, enter the **ip tcp window-size** command. When you use a Telnet connection, reduce the **screen-length** argument in the **terminal length** command to 20 or 30 lines. (CSCsc39357)

Open Caveats in Cisco IOS Release 12.2(31)SG3

This section lists the open caveats in Cisco IOS Release 12.2(31)SG3:

- When you enter the **access-list N permit host hostname** command on a redundant chassis operating in SSO mode, you might observe the following syslog messages. The command is not synchronized with the redundant supervisor engine, and keepalive warnings appear.

```
000099: Jul  9 01:22:36.478 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000100: Jul  9 01:22:46.534 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000101: Jul  9 01:22:56.566 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000102: Jul  9 01:23:06.598 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
```

```
000103: Jul  9 01:23:16.642 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000104: Jul  9 01:23:26.682 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000105: Jul  9 01:23:36.721 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000106: Jul  9 01:23:46.777 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000107: Jul  9 01:23:56.793 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
```

Workaround: When using the **access-list N permit host hostname** command, specify the IP address of the host rather than the hostname (CSCef67489)

- In rare instances, when you are using MAC ACL-based policers, the packet match counters in **show policy-map interface fa6/1** do not show the packets being matched:

```
clearwater#sh policy-map int
  FastEthernet3/2

   Service-policy output: p1

     Class-map: c1 (match-all)
       0 packets<--------It stays at '0' despite of traffic being received
       Match: access-group name fnacl21
       police: Per-interface
         Conform: 9426560 bytes Exceed: 16573440 bytes
```

Workaround: Verify that the MAC addresses being transmitted through the system are learned.

(CSCef01798)

- After an SSO switchover, you may receive a "PM-4-PORT_INCONSISTENT" error message on the switch console if you enter the **shutdown** command, then the **no shutdown** command on the port that is in UDLD error-disable state. This does not impact the switch; the port remains in UDLD error-disable state. Re-entering the **shutdown** command, then the **no shutdown** command on the same port will ensure that the error message does not re-appear.

  Workaround: None. (CSCeg48586)

- Occasionally, on redundant systems in SSO mode, applying the **apply cisco-phone $AVID vlan** *$VVID vlan* macro command to an interface connected to an IP phone may render the interface in the wrong state relative to the standby supervisor engine. This causes the SVI to be "down" after the switchover.

  Workaround: If the SVIs associated with the physical interface are down after the switchover, issue **shutdown** and **no shutdown** commands on the physical interface to bring up the SVIs. (CSCsb02308)

- When you issue the **ip http secure-server** command (or if the system reads it from the startup configuration), the device will check for the existence of a persistent self-signed certificate during boot up.
  - If such a certificate does not exist and the device's hostname and default_domain have been set, then a persistent self-signed certificate will be generated.
  - If such a certificate exists, the FQDN in the certificate is compared with the current device's hostname and default_domain. If either of these differs from the FQDN in the certificate, then the existing persistent self-signed certificate is replaced with a new one with the updated FQDN. Be aware that the existing keypair is used in the new certificate.

On a switch that support redundancy, the generation of the self-signed certificate is performed independently on the active and the standby supervisor engines. So, the certificates differ. After switchover, the HTTP client that holds the old certificate can not connect to the HTTPS server.

Workaround: Re-connect. (CSCsb11964)

- If you modify policers with a large number of VLAN tags on a Catalyst 4507R or a 4510R chassis with dual supervisor engines operating in SSO mode during substantial CPU bound traffic, the following message appears:

```
%HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync config-changed command to standby
```

Workaround: Reset the standby supervisor by entering the **redundancy reload peer** command. This command synchronizes the standby supervisor configuration with the active supervisor.

- A Catalyst 4500 series switch clears the mac-add-table notif counters when the feature is disabled.

Workaround: Re-connect. (CSCsc31540)

- After upgrading to Cisco IOS 12.2(31)SG and later releases, some CPU queues configured as SPAN sources and saved in the startup configuration file do not function as they did in the older software release.

This only impacts a switch that has any of the following queues are configured as SPAN source in releases prior to 12.2(31)SG and saved to startup-config. The SPAN destination would not get the same traffic after upgrading to 12.2(31)SG.

QueueID	Old QueueName	New QueueName
5	control-packet	control-packet
6	rpf-failure	control-packet
7	adj-same-if	control-packet
8	<unused queue>	control-packet
11	<unused queue>	adj-same-if
13	acl input log	rfp-failure
14	acl input forward	acl input log

Workaround: After upgrading to 12.2(31)SG and later releases, remove the old SPAN source configuration and reconfigure with the new queue names/IDs. For example:

```
Switch(config)# no monitor session n source cpu queue all rx
Switch(config)# monitor session n source cpu queue <new_Queue_Name>
```

(CSCsc94802)

- If you initiate a scp copy from the console and it is delayed long enough to cause a timeout, the console is disconnected.

Workarounds:

  - Use a different copy protocol.
  - Set a longer ssh timout.

(CSCsc94317)

- Occasionally, on redundant systems in SSO mode, applying the **apply cisco-phone $AVID vlan** *$VVID vlan* macro command to an interface connected to an IP phone may render the interface in the wrong state relative to the standby supervisor engine. This causes the SVI to be "down" after the switchover.

  Workaround: If the SVIs associated with the physical interface are down after the switchover, issue **shutdown** and **no shutdown** commands on the physical interface to bring up the SVIs. (CSCsb02308)

- To enable IP CEF if it is disabled by hardware exhaustion, use the **ip cef distributed** command.

  Workaround: None. (CSCsc11726)

- When you do not save the running configuration on the active supervisor engine before a Stateful Switchover occurs due to the failure of the active supervisor engine, the following error message is observed:

  ```
  00:00:26: %PM-4-PORT_INCONSISTENT: Port Gi3/1 is inconsistent: IDB state down (set
  00:00:02 ago), link: up (00:00:02 ago)
  ```

  Traffic loss is observed for about 500 ms.

  Workaround: Save your changes to the running configuration to avoid the error log and the loss of traffic during a Stateful Switchover.

- The RADIUS attribute 32 is not being sent to the RADIUS server for Cisco IOS Release 12.2(31)SG and beyond.

  Workaround: Downgrade to Cisco IOS Release 12.2(25)EWA10, if feasible. (CSCsi22041)

Resolved Caveats in Cisco IOS Release 12.2(31)SG3

This section lists the resolved caveats in Release 12.2(31)SG3:

- Cisco IOS Software has been enhanced with the introduction of additional software checks to signal improper use of data structures.

  This feature has been introduced in select Cisco IOS Software releases published after April 5, 2007.

  The %DATACORRUPTION-1-DATAINCONSISTENCY error message is preceded by a timestamp:

  ```
  May 17 10:01:27.815 UTC: %DATACORRUPTION-1-DATAINCONSISTENCY: copy error
  ```

  The error message is then followed by a traceback.

  Workaround: Gather the output from the **show tech-support** command and open a service request with the Technical Assistance Center (TAC) or designated support organization. (CSCsj44081)

Open Caveats in Cisco IOS Release 12.2(31)SG2

This section lists the open caveats in Cisco IOS Release 12.2(31)SG2:

- When you enter the **access-list N permit host hostname** command on a redundant chassis operating in SSO mode, you might observe the following syslog messages. The command is not synchronized with the redundant supervisor engine, and keepalive warnings appear.

  ```
  000099: Jul  9 01:22:36.478 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
  config-changed command to standby
  000100: Jul  9 01:22:46.534 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
  config-changed command to standby
  ```

```
000101: Jul  9 01:22:56.566 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000102: Jul  9 01:23:06.598 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
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config-changed command to standby
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config-changed command to standby
000107: Jul  9 01:23:56.793 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
```

Workaround: When using the **access-list N permit host hostname** command, specify the IP address of the host rather than the hostname (CSCef67489)

- In rare instances, when you are using MAC ACL-based policers, the packet match counters in **show policy-map interface fa6/1** do not show the packets being matched:

```
clearwater#sh policy-map int
  FastEthernet3/2

   Service-policy output: p1

     Class-map: c1 (match-all)
       0 packets<--------It stays at '0' despite of traffic being received
       Match: access-group name fnacl21
       police: Per-interface
         Conform: 9426560 bytes Exceed: 16573440 bytes
```

Workaround: Verify that the MAC addresses being transmitted through the system are learned.

(CSCef01798)

- After an SSO switchover, you may receive a "PM-4-PORT_INCONSISTENT" error message on the switch console if you enter the **shutdown** command, then the **no shutdown** command on the port that is in UDLD error-disable state. This does not impact the switch; the port remains in UDLD error-disable state. Re-entering the **shutdown** command, then the **no shutdown** command on the same port will ensure that the error message does not re-appear.

  Workaround: None. (CSCeg48586)

- Occasionally, on redundant systems in SSO mode, applying the **apply cisco-phone $AVID vlan** *$VVID vlan* macro command to an interface connected to an IP phone may render the interface in the wrong state relative to the standby supervisor engine. This causes the SVI to be "down" after the switchover.

  Workaround: If the SVIs associated with the physical interface are down after the switchover, issue **shutdown** and **no shutdown** commands on the physical interface to bring up the SVIs. (CSCsb02308)

- When you issue the **ip http secure-server** command (or if the system reads it from the startup configuration), the device will check for the existence of a persistent self-signed certificate during boot up.
  - If such a certificate does not exist and the device's hostname and default_domain have been set, then a persistent self-signed certificate will be generated.
  - If such a certificate exists, the FQDN in the certificate is compared with the current device's hostname and default_domain. If either of these differs from the FQDN in the certificate, then the existing persistent self-signed certificate is replaced with a new one with the updated FQDN. Be aware that the existing keypair is used in the new certificate.

  On a switch that support redundancy, the generation of the self-signed certificate is performed independently on the active and the standby supervisor engines. So, the certificates differ. After switchover, the HTTP client that holds the old certificate can not connect to the HTTPS server.

  Workaround: Re-connect. (CSCsb11964)
- If you modify policers with a large number of VLAN tags on a Catalyst 4507R or a 4510R chassis with dual supervisor engines operating in SSO mode during substantial CPU bound traffic, the following message appears:

  ```
  %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync config-changed command to standby
  ```

  Workaround: Reset the standby supervisor by entering the **redundancy reload peer** command. This command synchronizes the standby supervisor configuration with the active supervisor.
- A Catalyst 4500 series switch clears the mac-add-table notif counters when the feature is disabled.

  Workaround: Re-connect. (CSCsc31540)
- After upgrading to Cisco IOS 12.2(31)SG and later releases, some CPU queues configured as SPAN sources and saved in the startup configuration file do not function as they did in the older software release.

  This only impacts a switch that has any of the following queues are configured as SPAN source in releases prior to 12.2(31)SG and saved to startup-config. The SPAN destination would not get the same traffic after upgrading to 12.2(31)SG.

QueueID	Old QueueName	New QueueName
5	control-packet	control-packet
6	rpf-failure	control-packet
7	adj-same-if	control-packet
8	<unused queue>	control-packet
11	<unused queue>	adj-same-if
13	acl input log	rfp-failure
14	acl input forward	acl input log

Workaround: After upgrading to 12.2(31)SG and later releases, remove the old SPAN source configuration and reconfigure with the new queue names/IDs. For example:

```
Switch(config)# no monitor session n source cpu queue all rx
Switch(config)# monitor session n source cpu queue <new_Queue_Name>
```

(CSCsc94802)

- If you initiate a scp copy from the console and it is delayed long enough to cause a timeout, the console is disconnected.

  Workarounds:

  - Use a different copy protocol.
  - Set a longer ssh timout.

  (CSCsc94317)

- Occasionally, on redundant systems in SSO mode, applying the **apply cisco-phone $AVID vlan** *$VVID vlan* macro command to an interface connected to an IP phone may render the interface in the wrong state relative to the standby supervisor engine. This causes the SVI to be "down" after the switchover.

  Workaround: If the SVIs associated with the physical interface are down after the switchover, issue **shutdown** and **no shutdown** commands on the physical interface to bring up the SVIs. (CSCsb02308)

- To enable IP CEF if it is disabled by hardware exhaustion, use the **ip cef distributed** command.

  Workaround: None. (CSCsc11726)

- When you do not save the running configuration on the active supervisor engine before a Stateful Switchover occurs due to the failure of the active supervisor engine, the following error message is observed:

  ```
  00:00:26: %PM-4-PORT_INCONSISTENT: Port Gi3/1 is inconsistent: IDB state down (set
  00:00:02 ago), link: up (00:00:02 ago)
  ```

  Traffic loss is observed for about 500 ms.

  Workaround: Save your changes to the running configuration to avoid the error log and the loss of traffic during a Stateful Switchover.

- The RADIUS attribute 32 is not being sent to the RADIUS server for Cisco IOS Release 12.2(31)SG and beyond.

  Workaround: Downgrade to Cisco IOS Release 12.2(25)EWA10, if feasible. (CSCsi22041)

Resolved Caveats in Cisco IOS Release 12.2(31)SG2

This section lists the resolved caveats in Release 12.2(31)SG2:

- The Cisco Next Hop Resolution Protocol (NHRP) feature in Cisco IOS contains a vulnerability that can result in a restart of the device or possible remote code execution.

  NHRP is a primary component of the Dynamic Multipoint Virtual Private Network (DMVPN) feature.

  NHRP can operate in three ways: at the link layer (Layer 2), over Generic Routing Encapsulation (GRE) and multipoint GRE (mGRE) tunnels and directly on IP (IP protocol number 54). This vulnerability affects all three methods of operation.

  NHRP is not enabled by default for Cisco IOS.

  This vulnerability is addressed by Cisco bug IDs CSCin95836 for non-12.2 mainline releases and CSCsi23231 for 12.2 mainline releases.

  This advisory is posted at

  http://www.cisco.com/warp/public/707/cisco-sa-20070808-nhrp.shtml.

(CSCin95836)

Open Caveats in Cisco IOS Release 12.2(31)SG1

This section lists the open caveats in Cisco IOS Release 12.2(31)SG1:

- When you enter the **access-list N permit host hostname** command on a redundant chassis operating in SSO mode, you might observe the following syslog messages. The command is not synchronized with the redundant supervisor engine, and keepalive warnings appear.

```
000099: Jul  9 01:22:36.478 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000100: Jul  9 01:22:46.534 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
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000101: Jul  9 01:22:56.566 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
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config-changed command to standby
000107: Jul  9 01:23:56.793 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
```

  Workaround: When using the **access-list N permit host hostname** command, specify the IP address of the host rather than the hostname (CSCef67489)

- In rare instances, when you are using MAC ACL-based policers, the packet match counters in **show policy-map interface fa6/1** do not show the packets being matched:

```
clearwater#sh policy-map int
  FastEthernet3/2

   Service-policy output: p1

     Class-map: c1 (match-all)
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  Workaround: Verify that the MAC addresses being transmitted through the system are learned.

  (CSCef01798)

- After an SSO switchover, you may receive a "PM-4-PORT_INCONSISTENT" error message on the switch console if you enter the **shutdown** command, then the **no shutdown** command on the port that is in UDLD error-disable state. This does not impact the switch; the port remains in UDLD error-disable state. Re-entering the **shutdown** command, then the **no shutdown** command on the same port will ensure that the error message does not re-appear.

  Workaround: None. (CSCeg48586)

- Occasionally, on redundant systems in SSO mode, applying the **apply cisco-phone $AVID vlan** *$VVID vlan* macro command to an interface connected to an IP phone may render the interface in the wrong state relative to the standby supervisor engine. This causes the SVI to be “down” after the switchover.

  Workaround: If the SVIs associated with the physical interface are down after the switchover, issue **shutdown** and **no shutdown** commands on the physical interface to bring up the SVIs. (CSCsb02308)

- When you issue the **ip http secure-server** command (or if the system reads it from the startup configuration), the device will check for the existence of a persistent self-signed certificate during boot up.

  – If such a certificate does not exist and the device's hostname and default_domain have been set, then a persistent self-signed certificate will be generated.

  – If such a certificate exists, the FQDN in the certificate is compared with the current device's hostname and default_domain. If either of these differs from the FQDN in the certificate, then the existing persistent self-signed certificate is replaced with a new one with the updated FQDN. Be aware that the existing keypair is used in the new certificate.

  On a switch that support redundancy, the generation of the self-signed certificate is performed independently on the active and the standby supervisor engines. So, the certificates differ. After switchover, the HTTP client that holds the old certificate can not connect to the HTTPS server.

  Workaround: Re-connect. (CSCsb11964)

- If you modify policers with a large number of VLAN tags on a Catalyst 4507R or a 4510R chassis with dual supervisor engines operating in SSO mode during substantial CPU bound traffic, the following message appears:

  ```
  %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync config-changed command to standby
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  Workaround: Reset the standby supervisor by entering the **redundancy reload peer** command. This command synchronizes the standby supervisor configuration with the active supervisor.

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- After upgrading to Cisco IOS 12.2(31)SG and later releases, some CPU queues configured as SPAN sources and saved in the startup configuration file do not function as they did in the older software release.

  This only impacts a switch that has any of the following queues are configured as SPAN source in releases prior to 12.2(31)SG and saved to startup-config. The SPAN destination would not get the same traffic after upgrading to 12.2(31)SG.

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11	<unused queue>	adj-same-if
13	acl input log	rfp-failure
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Workaround: After upgrading to 12.2(31)SG and later releases, remove the old SPAN source configuration and reconfigure with the new queue names/IDs. For example:

```
Switch(config)# no monitor session n source cpu queue all rx
Switch(config)# monitor session n source cpu queue <new_Queue_Name>
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(CSCsc94802)

- If you initiate a scp copy from the console and it is delayed long enough to cause a timeout, the console is disconnected.

  Workarounds:

  - Use a different copy protocol.
  - Set a longer ssh timout.

  (CSCsc94317)

- Occasionally, on redundant systems in SSO mode, applying the **apply cisco-phone $AVID vlan** *$VVID vlan* macro command to an interface connected to an IP phone may render the interface in the wrong state relative to the standby supervisor engine. This causes the SVI to be "down" after the switchover.

  Workaround: If the SVIs associated with the physical interface are down after the switchover, issue **shutdown** and **no shutdown** commands on the physical interface to bring up the SVIs. (CSCsb02308)

- To enable IP CEF if it is disabled by hardware exhaustion, use the **ip cef distributed** command.

  Workaround: None. (CSCsc11726)

- When you do not save the running configuration on the active supervisor engine before a Stateful Switchover occurs due to the failure of the active supervisor engine, the following error message is observed:

  ```
  00:00:26: %PM-4-PORT_INCONSISTENT: Port Gi3/1 is inconsistent: IDB state down (set
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  Workaround: Downgrade to Cisco IOS Release 12.2(25)EWA10, if feasible. (CSCsi22041)

Resolved Caveats in Cisco IOS Release 12.2(31)SG1

This section lists the resolved caveats in Release 12.2(31)SG1:

- Specifically crafted CDP packets can cause a router to allocate and keep extra memory. Exploitation of this behaviour by sending multiple specifically crafted CDP packets could cause memory allocation problems on the router.

  Because CDP is a layer-2 protocol, this issue can only be triggered by systems that are residing on the same network segment.

  Workaround: Disable on interfaces where CDP is not necessary. (CSCse85200)

- Some (or all) CDP neighbors are invisible.

It only happens on releases that include the fix for CSCse85200.

When turning on "debug cdp even," the following message appears:

```
CDP-EV: Received item (type : 9) with invalid length 4
```

Workaround: None. (CSCsf07847)

Open Caveats in Cisco IOS Release 12.2(31)SG

This section lists the open caveats in Cisco IOS Release 12.2(31)SG:

- When you enter the **access-list N permit host hostname** command on a redundant chassis operating in SSO mode, you might observe the following syslog messages. The command is not synchronized with the redundant supervisor engine, and keepalive warnings appear.

```
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6	rpf-failure	control-packet
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8	<unused queue>	control-packet
11	<unused queue>	adj-same-if

QueueID	Old QueueName	New QueueName
13	acl input log	rfp-failure
14	acl input forward	acl input log

Workaround: After upgrading to 12.2(31)SG and later releases, remove the old SPAN source configuration and reconfigure with the new queue names/IDs. For example:

```
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(CSCsc94802)

- If you initiate a scp copy from the console and it is delayed long enough to cause a timeout, the console is disconnected.

  Workarounds:

  - Use a different copy protocol.
  - Set a longer ssh timout.

  (CSCsc94317)

- Occasionally, on redundant systems in SSO mode, applying the **apply cisco-phone $AVID vlan** *$VVID vlan* macro command to an interface connected to an IP phone may render the interface in the wrong state relative to the standby supervisor engine. This causes the SVI to be "down" after the switchover.

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  Workaround: None. (CSCsc11726)

- When you do not save the running configuration on the active supervisor engine before a Stateful Switchover occurs due to the failure of the active supervisor engine, the following error message is observed:

  ```
  00:00:26: %PM-4-PORT_INCONSISTENT: Port Gi3/1 is inconsistent: IDB state down (set
  00:00:02 ago), link: up (00:00:02 ago)
  ```

  Traffic loss is observed for about 500 ms.

  Workaround: Save your changes to the running configuration to avoid the error log and the loss of traffic during a Stateful Switchover.

- The RADIUS attribute 32 is not being sent to the RADIUS server for Cisco IOS Release 12.2(31)SG and beyond.

  Workaround: Downgrade to Cisco IOS Release 12.2(25)EWA10, if feasible. (CSCsi22041)

- In software releases 12.2(25)EWA10, 12.2(31)SGA2 and 12.2(31)SGA3, PoE Health Monitoring Diagnostic software introduced via CSCsf26804 *incorrectly* reports PoE errors for module WS-X4548-GB-RJ45V, hardware revision 4.0. (Use the **show module** command to see the hardware revision of module.) The software reloads the PoE module continuously, and the module will not operate.

  WS-X4548-GB-RJ45V with hardware revision 4.0 is NOT impacted by the problem reported in CSCsf26804 hence PoE health Monitor checks are not applicable to the module.

  Workaround: None.

This caveat is fixed in 12.2(25)EWA11 and 12.2(31)SGA4 software releases.

Release 12.2(37)SG is other recommended software release. 12.2(37)SG does not have the fix for CSCsf26804 and hence does not run into CSCsk85158.

A linecard replacement is *not* needed. *Do not* RMA the module. (CSCsk85158)

Resolved Caveats in Cisco IOS Release 12.2(31)SG

This section lists the resolved caveats in Release 12.2(31)SG:

- When changing the access VLAN ID on a sticky port configured with IPSG and voice VLAN, the secure MAC address counter on this port might become negative. This does not impact the system.

  Workaround: Avoid enabling IPSG on sticky ports that are configured with VVID. (CSCeg31712)

- QoS policing will fail if you configure more than 1000 policers on a trunk port and you remove some of the VLANs from the trunk port.

  Workaround: Use less than 1000 policers.(CSCsa57218)

- When Fast Hellos is configured on an interface thru the command **ip ospf dead-interval minimal hello-multiplier**, the dead-interval can be changed to exceed 1 second with the **ip ospf dead-interval** keyword. However, the running configuration still displays the **ip ospf dead-interval minimal hello-multiplier** command instead of the **ip ospf dead-interval** command.

  Workaround: To change the dead-interval when Fast Hellos is enabled, first disable Fast Hellos and then configure the new dead-interval. (CSCsa86676)

- In redundant systems in SSO mode, when one or more ports belong to port-channel and you issue the sequence of commands **shut** and **no shut** quickly on a port-channel interface on the active supervisor engine, all physical ports associated with the port-channel on the standby supervisor engine remain administratively shutdown. So, the **no shut** command does not get synced correctly on the standby supervisor engine. After issuing the **shut** command, if you wait 30-60 seconds before issuing a **no shut** command, you will not see the problem.

  Workaround: Re-issue the **shut** and **no shut** commands on the ports. (CSCsb16809)

- If you modify policers with a large number of VLAN tags on a Catalyst 4507R or a 4510R chassis (with dual supervisor engines operating in SSO mode) during substantial CPU bound traffic, the following message appears:

  ```
  %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync config-changed command to standby.
  ```

  Workaround: Reset the standby supervisor with the **redundancy reload peer** command, which synchronizes the standby supervisor engine configuration with that of the active supervisor engine

- Under rare conditions, when the active supervisor engine is running Cisco IOS 12.2(25r)EW and the standby supervisor engine is running Cisco IOS 12.2(31r)SG ROMMON, traffic may take slightly longer (less than 2 seconds) to resume switching on a WS-X4516-10GE supervisor engine after the SSO switchover.

  Workaround: Upgrade the ROMMON of both WS-4516-10GE supervisor engines with ROMMON version 12.2(31r)SG .

- Symptoms: The VTP feature in certain versions of Cisco IOS software may be vulnerable to a crafted packet sent from the local network segment which may lead to denial of service condition.

  Conditions: The packets must be received on a trunk enabled port.

Further Information: On the 13th September 2006, Phenoelit Group posted an advisory containing three vulnerabilities:

- VTP Version field DoS
- Integer Wrap in VTP revision
- Buffer Overflow in VTP VLAN name

These vulnerabilities are addressed by Cisco IDs:

- CSCsd52629/CSCsd34759—VTP version field DoS
- CSCse40078/CSCse47765—Integer Wrap in VTP revision
- CSCsd34855/CSCei54611—Buffer Overflow in VTP VLAN name

Cisco's statement and further information are available on the Cisco public website at http://www.cisco.com/warp/public/707/cisco-sr-20060913-vtp.shtml

(CCSCsd34759)

- Processing a specially crafted IPv6 Type 0 Routing header can crash a device running Cisco IOS software. This vulnerability does not affect IPv6 Type 2 Routing header which is used in mobile IPv6. IPv6 is not enabled by default in Cisco IOS.

  Cisco has made free software available to address this vulnerability for affected customers.

  There are workarounds available to mitigate the effects of the vulnerability. The workaround depends on if Mobile IPv6 is used and what version on Cisco IOS is being currently used.

  This advisory is posted at http://www.cisco.com/warp/public/707/cisco-sa-20070124-IOS-IPv6.shtml

  (CSCsd40334)

Open Caveats in Cisco IOS Release 12.2(25)SG4

This section lists the open caveats in Cisco IOS Release 12.2(25)SG4:

- Changes to console speed are not updated in ROMMON. If a system is reloaded, you will not see a prompt until Cisco IOS software re-starts.

  Workaround: None. (CSCee65294)

- On a system reload, some of the QoS policies that had previously loaded into the hardware may fail to load due to limited space.

  Workaround: Disable QoS with the **no qos** command, and then re-enable QoS with the **qos global** command. (CSCee52449)

- Insertion of unsupported SFPs (small form-factor pluggable optics) into a WS-X4448-GB-SFP or WS-X4448-GB-LX module and can cause undetected communication failures between the supervisor engine and the corresponding module. Subsequent insertion or removal of SFPs from the module is not recognized by the system. This activity can be observed on a Catalyst 4500 series switch using Release 12.1(12c)EW1 or later releases.

  Workaround: Reset the module with the **hw-module module reset** command. (CSCee05078)

- When in SML (Smart Missing Link) mode, some converter boxes (CPE devices) send pulses on the optical side when the Ethernet cable is removed. These converter boxes should also have an LT (Link Test) mode in which the optical side stays active regardless of the connection status and an ML (Missing Link) mode in which the optical side always stays shut down if the Ethernet cable is

disconnected. If a WS-X4148-FE-BD-LC port is connected to a converter box in SML mode, and the Ethernet cable on the box is removed, the port will eventually go into errdisable mode because of the continuous connecting and disconnecting (flapping) of the link.

Workaround: Configure the convertor box (CPE device) to operate in either LT (Link Test) or ML (Missing Link) mode. (CSCed28409)

- When PBR is configured on a Supervisor Engine III or Supervisor Engine IV, hardware-switched PBR packets update the access list or route map statistics improperly.

  Workaround: None. (CSCdz10171)

- A CompactFlash module formatted on either Supervisor Engine III or Supervisor Engine IV that uses Cisco IOS Releases 12.1(14)E, 12.1(19)E, or 12.1(13)EW will not work on Supervisor Engine II-Plus. The CompactFlash module will continue to work on the other supervisor engines.

  Workaround: Format the CompactFlash module on any Catalyst 4500 series switch supervisor engine that uses Release 12.1(19)EW (or later). (CSCeb36355)

- When you enter the **access-list N permit host hostname** command on a redundant chassis operating in SSO mode, you might observe the following syslog messages. The command is not synchronized with the redundant supervisor engine, and keepalive warnings appear.

```
000099: Jul  9 01:22:36.478 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000100: Jul  9 01:22:46.534 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000101: Jul  9 01:22:56.566 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000102: Jul  9 01:23:06.598 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000103: Jul  9 01:23:16.642 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000104: Jul  9 01:23:26.682 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000105: Jul  9 01:23:36.721 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000106: Jul  9 01:23:46.777 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000107: Jul  9 01:23:56.793 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
```

  Workaround: When using the **access-list N permit host hostname** command, specify the IP address of the host rather than the hostname (CSCef67489)

- In a hierarchical policer configuration with parent as the aggregate policer and child as the microflow policer, child microflow policer-matched packets report only the packets that are in the profile (they match the policing rate). Packets that exceed the policing rate are not reported in the class-map packet match statistics.

  Workaround: None. (CSCef88634)

- In rare instances, when you are using MAC ACL-based policers, the packet match counters in **show policy-map interface fa6/1** do not show the packets being matched:

```
clearwater#sh policy-map int
  FastEthernet3/2

   Service-policy output: p1
```

```
Class-map: c1 (match-all)
  0 packets<--------It stays at '0' despite of traffic being received
  Match: access-group name fnacl21
  police: Per-interface
    Conform: 9426560 bytes Exceed: 16573440 bytes
```

Workaround: Verify that the MAC addresses being transmitted through the system are learned.

(CSCef01798)

- After an SSO switchover, you may receive a "PM-4-PORT_INCONSISTENT" error message on the switch console if you enter the **shutdown** command, then the **no shutdown** command on the port that is in UDLD error-disable state. This does not impact the switch; the port remains in UDLD error-disable state. Re-entering the **shutdown** command, then the **no shutdown** command on the same port will ensure that the error message does not re-appear.

  Workaround: None. (CSCeg48586)

- When changing the access VLAN ID on a sticky port configured with IPSG and voice VLAN, the secure MAC address counter on this port might become negative. This does not impact the system.

  Workaround: Avoid enabling IPSG on sticky ports that are configured with VVID. (CSCeg31712)

- QoS policing will fail if you configure more than 1000 policers on a trunk port and you remove some of the VLANs from the trunk port.

  Workaround: Use less than 1000 policers.(CSCsa57218)

- Occasionally, on redundant systems in SSO mode, applying the **apply cisco-phone $AVID vlan** *$VVID vlan* macro command to an interface connected to an IP phone may render the interface in the wrong state relative to the standby supervisor engine. This causes the SVI to be "down" after the switchover.

  Workaround: If the SVIs associated with the physical interface are down after the switchover, issue **shutdown** and **no shutdown** commands on the physical interface to bring up the SVIs. (CSCsb02308)

- When Fast Hellos is configured on an interface thru the command **ip ospf dead-interval minimal hello-multiplier**, the dead-interval can be changed to exceed 1 second with the **ip ospf dead-interval** keyword. However, the running configuration still displays the **ip ospf dead-interval minimal hello-multiplier** command instead of the **ip ospf dead-interval** command.

  Workaround: To change the dead-interval when Fast Hellos is enabled, first disable Fast Hellos and then configure the new dead-interval. (CSCsa86676)

- In redundant systems in SSO mode, when one or more ports belong to port-channel and you issue the sequence of commands **shut** and **no shut** quickly on a port-channel interface on the active supervisor engine, all physical ports associated with the port-channel on the standby supervisor engine remain administratively shutdown. So, the **no shut** command does not get synced correctly on the standby supervisor engine. After issuing the **shut** command, if you wait 30-60 seconds before issuing a **no shut** command, you will not see the problem.

  Workaround: Re-issue the **shut** and **no shut** commands on the ports. (CSCsb16809)

- When you issue the **ip http secure-server** command (or if the system reads it from the startup configuration), the device will check for the existence of a persistent self-signed certificate during boot up.
  - If such a certificate does not exist and the device's hostname and default_domain have been set, then a persistent self-signed certificate will be generated.
  - If such a certificate exists, the FQDN in the certificate is compared with the current device's hostname and default_domain. If either of these differs from the FQDN in the certificate, then the existing persistent self-signed certificate is replaced with a new one with the updated FQDN. Be aware that the existing keypair is used in the new certificate.

  On a switch that support redundancy, the generation of the self-signed certificate is performed independently on the active and the standby supervisor engines. So, the certificates differ. After switchover, the HTTP client that holds the old certificate can not connect to the HTTPS server.

  Workaround: Re-connect. (CSCsb11964)
- If you modify policers with a large number of VLAN tags on a Catalyst 4507R or a 4510R chassis with dual supervisor engines operating in SSO mode during substantial CPU bound traffic, the following message appears:

  ```
  %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync config-changed command to standby
  ```

  Workaround: Reset the standby supervisor by entering the **redundancy reload peer** command. This command synchronizes the standby supervisor configuration with the active supervisor.
- In software releases 12.2(25)EWA10, 12.2(31)SGA2 and 12.2(31)SGA3, PoE Health Monitoring Diagnostic software introduced via CSCsf26804 *incorrectly* reports PoE errors for module WS-X4548-GB-RJ45V, hardware revision 4.0. (Use the **show module** command to see the hardware revision of module.) The software reloads the PoE module continuously, and the module will not operate.

  WS-X4548-GB-RJ45V with hardware revision 4.0 is NOT impacted by the problem reported in CSCsf26804 hence PoE health Monitor checks are not applicable to the module.

  Workaround: None.

  This caveat is fixed in 12.2(25)EWA11 and 12.2(31)SGA4 software releases.

  Release 12.2(37)SG is other recommended software release. 12.2(37)SG does not have the fix for CSCsf26804 and hence does not run into CSCsk85158.

  A linecard replacement is *not* needed. *Do not* RMA the module. (CSCsk85158)

Resolved Caveats in Cisco IOS Release 12.2(25)SG4

This section lists the resolved caveats in Release 12.2(25)SG4:

- In Cisco IOS Release 12.2(33)SXH or 12.2(18)SXF10, the output of the **show pagp neighbor** command may truncate the neighbor device name and port name fields by 1 character. This is a display issue and has no functional impact on the PAGP protocol.

  Workaround: None. If you want to determine a partner's correct information, use the **show cdp neighbor** command.

  (CSCsj81502)

Open Caveats in Cisco IOS Release 12.2(25)SG3

This section lists the open caveats in Cisco IOS Release 12.2(25)SG3:

- Changes to console speed are not updated in ROMMON. If a system is reloaded, you will not see a prompt until Cisco IOS software re-starts.

  Workaround: None. (CSCee65294)

- On a system reload, some of the QoS policies that had previously loaded into the hardware may fail to load due to limited space.

  Workaround: Disable QoS with the **no qos** command, and then re-enable QoS with the **qos global** command. (CSCee52449)

- Insertion of unsupported SFPs (small form-factor pluggable optics) into a WS-X4448-GB-SFP or WS-X4448-GB-LX module and can cause undetected communication failures between the supervisor engine and the corresponding module. Subsequent insertion or removal of SFPs from the module is not recognized by the system. This activity can be observed on a Catalyst 4500 series switch using Release 12.1(12c)EW1 or later releases.

  Workaround: Reset the module with the **hw-module module reset** command. (CSCee05078)

- When in SML (Smart Missing Link) mode, some converter boxes (CPE devices) send pulses on the optical side when the Ethernet cable is removed. These converter boxes should also have an LT (Link Test) mode in which the optical side stays active regardless of the connection status and an ML (Missing Link) mode in which the optical side always stays shut down if the Ethernet cable is disconnected. If a WS-X4148-FE-BD-LC port is connected to a converter box in SML mode, and the Ethernet cable on the box is removed, the port will eventually go into errdisable mode because of the continuous connecting and disconnecting (flapping) of the link.

  Workaround: Configure the convertor box (CPE device) to operate in either LT (Link Test) or ML (Missing Link) mode. (CSCed28409)

- When PBR is configured on a Supervisor Engine III or Supervisor Engine IV, hardware-switched PBR packets update the access list or route map statistics improperly.

  Workaround: None. (CSCdz10171)

- A CompactFlash module formatted on either Supervisor Engine III or Supervisor Engine IV that uses Cisco IOS Releases 12.1(14)E, 12.1(19)E, or 12.1(13)EW will not work on Supervisor Engine II-Plus. The CompactFlash module will continue to work on the other supervisor engines.

  Workaround: Format the CompactFlash module on any Catalyst 4500 series switch supervisor engine that uses Release 12.1(19)EW (or later). (CSCeb36355)

- When you enter the **access-list N permit host hostname** command on a redundant chassis operating in SSO mode, you might observe the following syslog messages. The command is not synchronized with the redundant supervisor engine, and keepalive warnings appear.

```
000099: Jul  9 01:22:36.478 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000100: Jul  9 01:22:46.534 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000101: Jul  9 01:22:56.566 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000102: Jul  9 01:23:06.598 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000103: Jul  9 01:23:16.642 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000104: Jul  9 01:23:26.682 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
```

```
000105: Jul  9 01:23:36.721 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000106: Jul  9 01:23:46.777 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000107: Jul  9 01:23:56.793 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
```

Workaround: When using the **access-list N permit host hostname** command, specify the IP address of the host rather than the hostname (CSCef67489)

- In a hierarchical policer configuration with parent as the aggregate policer and child as the microflow policer, child microflow policer-matched packets report only the packets that are in the profile (they match the policing rate). Packets that exceed the policing rate are not reported in the class-map packet match statistics.

  Workaround: None. (CSCef88634)

- In rare instances, when you are using MAC ACL-based policers, the packet match counters in **show policy-map interface fa6/1** do not show the packets being matched:

```
clearwater#sh policy-map int
  FastEthernet3/2

   Service-policy output: p1

     Class-map: c1 (match-all)
       0 packets<--------It stays at '0' despite of traffic being received
       Match: access-group name fnacl21
       police: Per-interface
         Conform: 9426560 bytes Exceed: 16573440 bytes
```

  Workaround: Verify that the MAC addresses being transmitted through the system are learned.

  (CSCef01798)

- After an SSO switchover, you may receive a "PM-4-PORT_INCONSISTENT" error message on the switch console if you enter the **shutdown** command, then the **no shutdown** command on the port that is in UDLD error-disable state. This does not impact the switch; the port remains in UDLD error-disable state. Re-entering the **shutdown** command, then the **no shutdown** command on the same port will ensure that the error message does not re-appear.

  Workaround: None. (CSCeg48586)

- When changing the access VLAN ID on a sticky port configured with IPSG and voice VLAN, the secure MAC address counter on this port might become negative. This does not impact the system.

  Workaround: Avoid enabling IPSG on sticky ports that are configured with VVID. (CSCeg31712)

- QoS policing will fail if you configure more than 1000 policers on a trunk port and you remove some of the VLANs from the trunk port.

  Workaround: Use less than 1000 policers.(CSCsa57218)

- Occasionally, on redundant systems in SSO mode, applying the **apply cisco-phone $AVID vlan** *$VVID vlan* macro command to an interface connected to an IP phone may render the interface in the wrong state relative to the standby supervisor engine. This causes the SVI to be "down" after the switchover.

  Workaround: If the SVIs associated with the physical interface are down after the switchover, issue **shutdown** and **no shutdown** commands on the physical interface to bring up the SVIs. (CSCsb02308)

- When Fast Hellos is configured on an interface thru the command **ip ospf dead-interval minimal hello-multiplier**, the dead-interval can be changed to exceed 1 second with the **ip ospf dead-interval** keyword. However, the running configuration still displays the **ip ospf dead-interval minimal hello-multiplier** command instead of the **ip ospf dead-interval** command.

  Workaround: To change the dead-interval when Fast Hellos is enabled, first disable Fast Hellos and then configure the new dead-interval. (CSCsa86676)

- In redundant systems in SSO mode, when one or more ports belong to port-channel and you issue the sequence of commands **shut** and **no shut** quickly on a port-channel interface on the active supervisor engine, all physical ports associated with the port-channel on the standby supervisor engine remain administratively shutdown. So, the **no shut** command does not get synced correctly on the standby supervisor engine. After issuing the **shut** command, if you wait 30-60 seconds before issuing a **no shut** command, you will not see the problem.

  Workaround: Re-issue the **shut** and **no shut** commands on the ports. (CSCsb16809)

- When you issue the **ip http secure-server** command (or if the system reads it from the startup configuration), the device will check for the existence of a persistent self-signed certificate during boot up.

  – If such a certificate does not exist and the device's hostname and default_domain have been set, then a persistent self-signed certificate will be generated.

  – If such a certificate exists, the FQDN in the certificate is compared with the current device's hostname and default_domain. If either of these differs from the FQDN in the certificate, then the existing persistent self-signed certificate is replaced with a new one with the updated FQDN. Be aware that the existing keypair is used in the new certificate.

  On a switch that support redundancy, the generation of the self-signed certificate is performed independently on the active and the standby supervisor engines. So, the certificates differ. After switchover, the HTTP client that holds the old certificate can not connect to the HTTPS server.

  Workaround: Re-connect. (CSCsb11964)

- If you modify policers with a large number of VLAN tags on a Catalyst 4507R or a 4510R chassis with dual supervisor engines operating in SSO mode during substantial CPU bound traffic, the following message appears:

  ```
  %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync config-changed command to standby
  ```

  Workaround: Reset the standby supervisor by entering the **redundancy reload peer** command. This command synchronizes the standby supervisor configuration with the active supervisor.

- In software releases 12.2(25)EWA10, 12.2(31)SGA2 and 12.2(31)SGA3, PoE Health Monitoring Diagnostic software introduced via CSCsf26804 *incorrectly* reports PoE errors for module WS-X4548-GB-RJ45V, hardware revision 4.0. (Use the **show module** command to see the hardware revision of module.) The software reloads the PoE module continuously, and the module will not operate.

  WS-X4548-GB-RJ45V with hardware revision 4.0 is NOT impacted by the problem reported in CSCsf26804 hence PoE health Monitor checks are not applicable to the module.

  Workaround: None.

  This caveat is fixed in 12.2(25)EWA11 and 12.2(31)SGA4 software releases.

  Release 12.2(37)SG is other recommended software release. 12.2(37)SG does not have the fix for CSCsf26804 and hence does not run into CSCsk85158.

  A linecard replacement is *not* needed. *Do not* RMA the module. (CSCsk85158)

Resolved Caveats in Cisco IOS Release 12.2(25)SG3

This section lists the resolved caveats in Release 12.2(25)SG3:

- Cisco IOS Software has been enhanced with the introduction of additional software checks to signal improper use of data structures.

  This feature has been introduced in select Cisco IOS Software releases published after April 5, 2007.

  The %DATACORRUPTION-1-DATAINCONSISTENCY error message is preceded by a timestamp:

  ```
  May 17 10:01:27.815 UTC: %DATACORRUPTION-1-DATAINCONSISTENCY: copy error
  ```

  The error message is then followed by a traceback.

  Workaround: Gather the output from the **show tech-support** command and open a service request with the Technical Assistance Center (TAC) or designated support organization. (CSCsj44081)

Open Caveats in Cisco IOS Release 12.2(25)SG2

This section lists the open caveats in Cisco IOS Release 12.2(25)SG2:

- Changes to console speed are not updated in ROMMON. If a system is reloaded, you will not see a prompt until Cisco IOS software re-starts.

  Workaround: None. (CSCee65294)

- On a system reload, some of the QoS policies that had previously loaded into the hardware may fail to load due to limited space.

  Workaround: Disable QoS with the **no qos** command, and then re-enable QoS with the **qos global** command. (CSCee52449)

- Insertion of unsupported SFPs (small form-factor pluggable optics) into a WS-X4448-GB-SFP or WS-X4448-GB-LX module and can cause undetected communication failures between the supervisor engine and the corresponding module. Subsequent insertion or removal of SFPs from the module is not recognized by the system. This activity can be observed on a Catalyst 4500 series switch using Release 12.1(12c)EW1 or later releases.

  Workaround: Reset the module with the **hw-module module reset** command. (CSCee05078)

- When in SML (Smart Missing Link) mode, some converter boxes (CPE devices) send pulses on the optical side when the Ethernet cable is removed. These converter boxes should also have an LT (Link Test) mode in which the optical side stays active regardless of the connection status and an ML (Missing Link) mode in which the optical side always stays shut down if the Ethernet cable is disconnected. If a WS-X4148-FE-BD-LC port is connected to a converter box in SML mode, and the Ethernet cable on the box is removed, the port will eventually go into errdisable mode because of the continuous connecting and disconnecting (flapping) of the link.

  Workaround: Configure the convertor box (CPE device) to operate in either LT (Link Test) or ML (Missing Link) mode. (CSCed28409)

- When PBR is configured on a Supervisor Engine III or Supervisor Engine IV, hardware-switched PBR packets update the access list or route map statistics improperly.

  Workaround: None. (CSCdz10171)

- A CompactFlash module formatted on either Supervisor Engine III or Supervisor Engine IV that uses Cisco IOS Releases 12.1(14)E, 12.1(19)E, or 12.1(13)EW will not work on Supervisor Engine II-Plus. The CompactFlash module will continue to work on the other supervisor engines.

  Workaround: Format the CompactFlash module on any Catalyst 4500 series switch supervisor engine that uses Release 12.1(19)EW (or later). (CSCeb36355)

- When you enter the **access-list N permit host hostname** command on a redundant chassis operating in SSO mode, you might observe the following syslog messages. The command is not synchronized with the redundant supervisor engine, and keepalive warnings appear.

```
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  Workaround: When using the **access-list N permit host hostname** command, specify the IP address of the host rather than the hostname (CSCef67489)

- In a hierarchical policer configuration with parent as the aggregate policer and child as the microflow policer, child microflow policer-matched packets report only the packets that are in the profile (they match the policing rate). Packets that exceed the policing rate are not reported in the class-map packet match statistics.

  Workaround: None. (CSCef88634)

- In rare instances, when you are using MAC ACL-based policers, the packet match counters in **show policy-map interface fa6/1** do not show the packets being matched:

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clearwater#sh policy-map int
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   Service-policy output: p1

     Class-map: c1 (match-all)
       0 packets<--------It stays at '0' despite of traffic being received
       Match: access-group name fnacl21
       police: Per-interface
         Conform: 9426560 bytes Exceed: 16573440 bytes
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  Workaround: Verify that the MAC addresses being transmitted through the system are learned.

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- After an SSO switchover, you may receive a “PM-4-PORT_INCONSISTENT” error message on the switch console if you enter the **shutdown** command, then the **no shutdown** command on the port that is in UDLD error-disable state. This does not impact the switch; the port remains in UDLD error-disable state. Re-entering the **shutdown** command, then the **no shutdown** command on the same port will ensure that the error message does not re-appear.

Workaround: None. (CSCeg48586)

- When changing the access VLAN ID on a sticky port configured with IPSG and voice VLAN, the secure MAC address counter on this port might become negative. This does not impact the system.

  Workaround: Avoid enabling IPSG on sticky ports that are configured with VVID. (CSCeg31712)

- QoS policing will fail if you configure more than 1000 policers on a trunk port and you remove some of the VLANs from the trunk port.

  Workaround: Use less than 1000 policers.(CSCsa57218)

- Occasionally, on redundant systems in SSO mode, applying the **apply cisco-phone $AVID vlan** *$VVID vlan* macro command to an interface connected to an IP phone may render the interface in the wrong state relative to the standby supervisor engine. This causes the SVI to be "down" after the switchover.

  Workaround: If the SVIs associated with the physical interface are down after the switchover, issue **shutdown** and **no shutdown** commands on the physical interface to bring up the SVIs. (CSCsb02308)

- When Fast Hellos is configured on an interface thru the command **ip ospf dead-interval minimal hello-multiplier**, the dead-interval can be changed to exceed 1 second with the **ip ospf dead-interval** keyword. However, the running configuration still displays the **ip ospf dead-interval minimal hello-multiplier** command instead of the **ip ospf dead-interval** command.

  Workaround: To change the dead-interval when Fast Hellos is enabled, first disable Fast Hellos and then configure the new dead-interval. (CSCsa86676)

- In redundant systems in SSO mode, when one or more ports belong to port-channel and you issue the sequence of commands **shut** and **no shut** quickly on a port-channel interface on the active supervisor engine, all physical ports associated with the port-channel on the standby supervisor engine remain administratively shutdown. So, the **no shut** command does not get synced correctly on the standby supervisor engine. After issuing the **shut** command, if you wait 30-60 seconds before issuing a **no shut** command, you will not see the problem.

  Workaround: Re-issue the **shut** and **no shut** commands on the ports. (CSCsb16809)

- When you issue the **ip http secure-server** command (or if the system reads it from the startup configuration), the device will check for the existence of a persistent self-signed certificate during boot up.

  – If such a certificate does not exist and the device's hostname and default_domain have been set, then a persistent self-signed certificate will be generated.

  – If such a certificate exists, the FQDN in the certificate is compared with the current device's hostname and default_domain. If either of these differs from the FQDN in the certificate, then the existing persistent self-signed certificate is replaced with a new one with the updated FQDN. Be aware that the existing keypair is used in the new certificate.

  On a switch that support redundancy, the generation of the self-signed certificate is performed independently on the active and the standby supervisor engines. So, the certificates differ. After switchover, the HTTP client that holds the old certificate can not connect to the HTTPS server.

  Workaround: Re-connect. (CSCsb11964)

- If you modify policers with a large number of VLAN tags on a Catalyst 4507R or a 4510R chassis with dual supervisor engines operating in SSO mode during substantial CPU bound traffic, the following message appears:

```
%HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync config-changed command to standby
```

Workaround: Reset the standby supervisor by entering the **redundancy reload peer** command. This command synchronizes the standby supervisor configuration with the active supervisor.

- In software releases 12.2(25)EWA10, 12.2(31)SGA2 and 12.2(31)SGA3, PoE Health Monitoring Diagnostic software introduced via CSCsf26804 *incorrectly* reports PoE errors for module WS-X4548-GB-RJ45V, hardware revision 4.0. (Use the **show module** command to see the hardware revision of module.) The software reloads the PoE module continuously, and the module will not operate.

  WS-X4548-GB-RJ45V with hardware revision 4.0 is NOT impacted by the problem reported in CSCsf26804 hence PoE health Monitor checks are not applicable to the module.

  Workaround: None.

  This caveat is fixed in 12.2(25)EWA11 and 12.2(31)SGA4 software releases.

  Release 12.2(37)SG is other recommended software release. 12.2(37)SG does not have the fix for CSCsf26804 and hence does not run into CSCsk85158.

  A linecard replacement is *not* needed. *Do not* RMA the module. (CSCsk85158)

Resolved Caveats in Cisco IOS Release 12.2(25)SG2

This section lists the resolved caveats in Release 12.2(25)SG2:

- Cisco IOS Software has been enhanced with the introduction of additional software checks to signal improper use of data structures.

  This feature has been introduced in select Cisco IOS Software releases published after April 5, 2007.

  The %DATACORRUPTION-1-DATAINCONSISTENCY error message is preceded by a timestamp:

  ```
  May 17 10:01:27.815 UTC: %DATACORRUPTION-1-DATAINCONSISTENCY: copy error
  ```

  The error message is then followed by a traceback.

  Workaround: Gather the output from the **show tech-support** command and open a service request with the Technical Assistance Center (TAC) or designated support organization. (CSCsj44081)

- Cisco IOS and Cisco IOS XR contain a vulnerability when processing specially crafted IPv6 packets with a Type 0 Routing Header present. Exploitation of this vulnerability can lead to information leakage on affected Cisco IOS and Cisco IOS XR devices, and may also result in a crash of the affected Cisco IOS device. Successful exploitation on an affected device running Cisco IOS XR will not result in a crash of the device itself, but may result in a crash of the IPv6 subsystem.

  Cisco has made free software available to address this vulnerability for affected customers. There are workarounds available to mitigate the effects of the vulnerability.

  This advisory is posted at

  http://www.cisco.com/warp/public/707/cisco-sa-20070808-IOS-IPv6-leak.shtml.

  (CSCef77013)

- The Cisco Next Hop Resolution Protocol (NHRP) feature in Cisco IOS contains a vulnerability that can result in a restart of the device or possible remote code execution.

  NHRP is a primary component of the Dynamic Multipoint Virtual Private Network (DMVPN) feature.

NHRP can operate in three ways: at the link layer (Layer 2), over Generic Routing Encapsulation (GRE) and multipoint GRE (mGRE) tunnels and directly on IP (IP protocol number 54). This vulnerability affects all three methods of operation.

NHRP is not enabled by default for Cisco IOS.

This vulnerability is addressed by Cisco bug IDs CSCin95836 for non-12.2 mainline releases and CSCsi23231 for 12.2 mainline releases.

This advisory is posted at

http://www.cisco.com/warp/public/707/cisco-sa-20070808-nhrp.shtml.

(CSCin95836)

Open Caveats in Cisco IOS Release 12.2(25)SG1

This section lists the open caveats in Cisco IOS Release 12.2(25)SG1:

- Changes to console speed are not updated in ROMMON. If a system is reloaded, you will not see a prompt until Cisco IOS software re-starts.

  Workaround: None. (CSCee65294)

- On a system reload, some of the QoS policies that had previously loaded into the hardware may fail to load due to limited space.

  Workaround: Disable QoS with the **no qos** command, and then re-enable QoS with the **qos global** command. (CSCee52449)

- Insertion of unsupported SFPs (small form-factor pluggable optics) into a WS-X4448-GB-SFP or WS-X4448-GB-LX module and can cause undetected communication failures between the supervisor engine and the corresponding module. Subsequent insertion or removal of SFPs from the module is not recognized by the system. This activity can be observed on a Catalyst 4500 series switch using Release 12.1(12c)EW1 or later releases.

  Workaround: Reset the module with the **hw-module module reset** command. (CSCee05078)

- When in SML (Smart Missing Link) mode, some converter boxes (CPE devices) send pulses on the optical side when the Ethernet cable is removed. These converter boxes should also have an LT (Link Test) mode in which the optical side stays active regardless of the connection status and an ML (Missing Link) mode in which the optical side always stays shut down if the Ethernet cable is disconnected. If a WS-X4148-FE-BD-LC port is connected to a converter box in SML mode, and the Ethernet cable on the box is removed, the port will eventually go into errdisable mode because of the continuous connecting and disconnecting (flapping) of the link.

  Workaround: Configure the convertor box (CPE device) to operate in either LT (Link Test) or ML (Missing Link) mode. (CSCed28409)

- When PBR is configured on a Supervisor Engine III or Supervisor Engine IV, hardware-switched PBR packets update the access list or route map statistics improperly.

  Workaround: None. (CSCdz10171)

- A CompactFlash module formatted on either Supervisor Engine III or Supervisor Engine IV that uses Cisco IOS Releases 12.1(14)E, 12.1(19)E, or 12.1(13)EW will not work on Supervisor Engine II-Plus. The CompactFlash module will continue to work on the other supervisor engines.

  Workaround: Format the CompactFlash module on any Catalyst 4500 series switch supervisor engine that uses Release 12.1(19)EW (or later). (CSCeb36355)

- When you enter the **access-list N permit host hostname** command on a redundant chassis operating in SSO mode, you might observe the following syslog messages. The command is not synchronized with the redundant supervisor engine, and keepalive warnings appear.

```
000099: Jul  9 01:22:36.478 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
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  Workaround: When using the **access-list N permit host hostname** command, specify the IP address of the host rather than the hostname (CSCef67489)

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  Workaround: None. (CSCef88634)

- In rare instances, when you are using MAC ACL-based policers, the packet match counters in **show policy-map interface fa6/1** do not show the packets being matched:

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clearwater#sh policy-map int
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   Service-policy output: p1

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  Workaround: Verify that the MAC addresses being transmitted through the system are learned.

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- After an SSO switchover, you may receive a “PM-4-PORT_INCONSISTENT” error message on the switch console if you enter the **shutdown** command, then the **no shutdown** command on the port that is in UDLD error-disable state. This does not impact the switch; the port remains in UDLD error-disable state. Re-entering the **shutdown** command, then the **no shutdown** command on the same port will ensure that the error message does not re-appear.

  Workaround: None. (CSCeg48586)

- When changing the access VLAN ID on a sticky port configured with IPSG and voice VLAN, the secure MAC address counter on this port might become negative. This does not impact the system.

  Workaround: Avoid enabling IPSG on sticky ports that are configured with VVID. (CSCeg31712)

- QoS policing will fail if you configure more than 1000 policers on a trunk port and you remove some of the VLANs from the trunk port.

  Workaround: Use less than 1000 policers.(CSCsa57218)

- Occasionally, on redundant systems in SSO mode, applying the **apply cisco-phone $AVID vlan** *$VVID vlan* macro command to an interface connected to an IP phone may render the interface in the wrong state relative to the standby supervisor engine. This causes the SVI to be "down" after the switchover.

  Workaround: If the SVIs associated with the physical interface are down after the switchover, issue **shutdown** and **no shutdown** commands on the physical interface to bring up the SVIs. (CSCsb02308)

- When Fast Hellos is configured on an interface thru the command **ip ospf dead-interval minimal hello-multiplier**, the dead-interval can be changed to exceed 1 second with the **ip ospf dead-interval** keyword. However, the running configuration still displays the **ip ospf dead-interval minimal hello-multiplier** command instead of the **ip ospf dead-interval** command.

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  – If such a certificate does not exist and the device's hostname and default_domain have been set, then a persistent self-signed certificate will be generated.

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  On a switch that support redundancy, the generation of the self-signed certificate is performed independently on the active and the standby supervisor engines. So, the certificates differ. After switchover, the HTTP client that holds the old certificate can not connect to the HTTPS server.

  Workaround: Re-connect. (CSCsb11964)

- If you modify policers with a large number of VLAN tags on a Catalyst 4507R or a 4510R chassis with dual supervisor engines operating in SSO mode during substantial CPU bound traffic, the following message appears:

  ```
  %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync config-changed command to standby
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  Workaround: Reset the standby supervisor by entering the **redundancy reload peer** command. This command synchronizes the standby supervisor configuration with the active supervisor.

Resolved Caveats in Cisco IOS Release 12.2(25)SG1

This section lists the resolved caveats in Release 12.2(25)SG1:

- Specifically crafted CDP packets can cause a router to allocate and keep extra memory. Exploitation of this behaviour by sending multiple specifically crafted CDP packets could cause memory allocation problems on the router.

  Because CDP is a layer-2 protocol, this issue can only be triggered by systems that are residing on the same network segment.

  Workaround: Disable on interfaces where CDP is not necessary. (CSCse85200)

- Some (or all) CDP neighbors are invisible.

  It only happens on releases that include the fix for CSCse85200.

  When turning on "debug cdp even," the following message appears:

  ```
  CDP-EV: Received item (type : 9) with invalid length 4
  ```

  Workaround: None. (CSCsf07847)

- Processing a specially crafted IPv6 Type 0 Routing header can crash a device running Cisco IOS software. This vulnerability does not affect IPv6 Type 2 Routing header which is used in mobile IPv6. IPv6 is not enabled by default in Cisco IOS.

  Cisco has made free software available to address this vulnerability for affected customers.

  There are workarounds available to mitigate the effects of the vulnerability. The workaround depends on if Mobile IPv6 is used and what version on Cisco IOS is being currently used.

  This advisory is posted at
  http://www.cisco.com/warp/public/707/cisco-sa-20070124-IOS-IPv6.shtml

  (CSCsd40334)

- Cisco Catalyst 6000, 6500 series and Cisco 7600 series that have a Network Analysis Module installed are vulnerable to an attack, which could allow an attacker to gain complete control of the system. Only Cisco Catalyst systems that have a NAM on them are affected. This vulnerability affects systems that run Cisco IOS or Catalyst Operating System (CatOS).

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  (CSCse52951)

Open Caveats in Cisco IOS Release 12.2(25)SG

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  Workaround: None. (CSCee65294)

- On a system reload, some of the QoS policies that had previously loaded into the hardware may fail to load due to limited space.

  Workaround: Disable QoS with the **no qos** command, and then re-enable QoS with the **qos global** command. (CSCee52449)

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- QoS policing will fail if you configure more than 1000 policers on a trunk port and you remove some of the VLANs from the trunk port.

  Workaround: Use less than 1000 policers.(CSCsa57218)

- On redundant systems in SSO mode, when you issue the **cisco-phone $AVID $VVID** macro command to an interface connected to an IP phone, you might leave the interface on the standby supervisor engine in a wrong state. This would cause the data SVI and/or the voice SVI to be down after the switchover.

  Workaround: If the data or video SVIs associated to the physical interface (connected to the IP phone) are down after the switchover, issue the **shutdown** and **no shutdown** commands on the physical interface to restore the correct (up) state for all the SVIs. (CSCsb02308)

- When Fast Hellos is configured on an interface thru the command **ip ospf dead-interval minimal hello-multiplier**, the dead-interval can be changed to exceed 1 second with the **ip ospf dead-interval** keyword. However, the running configuration still displays the **ip ospf dead-interval minimal hello-multiplier** command instead of the **ip ospf dead-interval** command.

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  - If such a certificate does not exist and the device's hostname and default_domain have been set, then a persistent self-signed certificate will be generated.
  - If such a certificate exists, the FQDN in the certificate is compared with the current device's hostname and default_domain. If either of these differs from the FQDN in the certificate, then the existing persistent self-signed certificate is replaced with a new one with the updated FQDN. Be aware that the existing keypair is used in the new certificate.

  On a switch that support redundancy, the generation of the self-signed certificate is performed independently on the active and the standby supervisor engines. So, the certificates differ. After switchover, the HTTP client that holds the old certificate can not connect to the HTTPS server.

  Workaround: Re-connect. (CSCsb11964)

- If you modify policers with a large number of VLAN tags on a Catalyst 4507R or a 4510R chassis with dual supervisor engines operating in SSO mode during substantial CPU bound traffic, the following message appears:

  ```
  %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync config-changed command to standby
  ```

  Workaround: Reset the standby supervisor by entering the **redundancy reload peer** command. This command synchronizes the standby supervisor configuration with the active supervisor.

Resolved Caveats in Cisco IOS Release 12.2(25)SG

This section lists the resolved caveats in Release 12.2(25)SG:

- After moving to a non-redundant chassis, a supervisor engine that was previously configured in SSO mode will not be able to configure router ports or port-channel.

  Workarounds:

  1. Before moving the supervisor engine to a non-redundancy-capable chassis, change the mode to RPR.

  2. Enter the **write memory** command and reload the switch from the non-redundancy chassis. (CSCef67677)

- If you enter the **default interface** command at the interface level, then at the interface configuration level, any command you enter after a **macro apply** command is not accepted. The Help(?) feature will show only two options: exit and help.

  Workaround: Exit, then re-enter interface configuration mode. All commands will be accepted, even after you enter the **macro apply** command. (CSCsa44632)

- Entering the **no ip flow ingress** command will not turn off the collection of switched IP flows.

  Workaround: Use the **no ip flow ingress** command in conjunction with the **no ip flow ingress layer2-switched** command. (CSCsa67042)

- Modifying a policer may not work if you configure more than 800 policers.

  Workaround: Remove, reconfigure and reinstall policers, or, use less than 800 policers. (CSCsa66422)

- When you apply smartport macros (like “cisco-switch” and “cisco-desktop”) on a WS-C457R or a WS-C4510R are using CNA, the active supervisor goes through an unexpected switchover.

  Workaround: No workarounds are available. Enter the **default interface** command and apply smartport macros such as “cisco-switch” and “cisco-desktop”. (CSCsb59783)

- When you enter the **default interface** command on a WS-C457R or a WS-C4510R are using HTTP, the active supervisor goes through an unexpected switchover.

  Workaround: No workarounds are available. Enter the **default interface** command and apply smartport macros such as “cisco-switch” and “cisco-desktop”. (CSCei76082)

- Cisco IOS may permit arbitrary code execution after exploitation of a heap-based buffer overflow vulnerability. Cisco has included additional integrity checks in its software, as further described below, that are intended to reduce the likelihood of arbitrary code execution.

  Cisco has made free software available that includes the additional integrity checks for affected customers.

  This advisory is posted at http://www.cisco.com/warp/public/707/cisco-sa-20051102-timers.shtml. (CSCei61732)

- Symptoms: The VTP feature in certain versions of Cisco IOS software is vulnerable to a locally-exploitable buffer overflow condition and potential execution of arbitrary code. If a VTP summary advertisement is received with a Type-Length-Value (TLV) containing a VLAN name greater than 100 characters, the receiving switch will reset with an Unassigned Exception error.

  Conditions: The packets must be received on a trunk enabled port, with a matching domain name and a matching VTP domain password (if configured).

  Further Information: On the 13th September 2006, Phenoelit Group posted an advisory containing three vulnerabilities:

  – VTP Version field DoS
  – Integer Wrap in VTP revision
  – Buffer Overflow in VTP VLAN name

  These vulnerabilities are addressed by Cisco IDs:

  – CSCsd52629/CSCsd34759—VTP version field DoS
  – CSCse40078/CSCse47765—Integer Wrap in VTP revision
  – CSCsd34855/CSCei54611—Buffer Overflow in VTP VLAN name

Cisco's statement and further information are available on the Cisco public website at http://www.cisco.com/warp/public/707/cisco-sr-20060913-vtp.shtml

(CSCei54611)

Open Caveats in Cisco IOS Release 12.2(25)EWA13

This section lists the open caveats in Cisco IOS Release 12.2(25)EWA13:

- While configuring Smartport macros via HTTP interactively, a switch might restart unexpectedly.

  Workaround: Provide the entire command sequence in the browser *command* area as if you were entering the commands through the CLI. (CSCei76082)

- A switch upgrading to Cisco IOS Releases 12.2(25)EWA or 12.2(31)SG might show unusual uptime in the output of the **show version** command:

  ```
  Switch uptime is 113 years, 43 weeks, 4 days, 7 hours, 53 minutes
  ```

  This caveat is cosmetic only; it does not impact the operation of the switch.

  Workaround: Power-cycle the switch. (CSCsg00796)

- When hardcoded duplex and speed settings are deleted after an interface shuts down, an "a-" is added to the duplex and speed in the output from the **show interface status** command.

  This does not impact performance.

  Workaround: Issue the **no shutdown** command. (CSCsg27395)

Resolved Caveats in Cisco IOS Release 12.2(25)EWA13

This section lists the resolved caveat in Cisco IOS Release 12.2(25)EWA13:

- Once auto-QoS is enabled on a switch, data traffic may be dropped when Dynamic Buffer Leaking (DBL) is enabled.

  While this problem occurs, traffic drops are displayed under the Dbl-Drop-Queue counter on the output of the **show interface <mod/port> counter detail** command.

  Workaround: Disable DBL globally by configuring the **no qos dbl** command. (CSCsk07525)

- When MSDP and OSPF are configured, the MSDP timer is set to 1, and you issue the **no ip routing** command, the switch reloads because of memory corruption in one of the pointerrs used by MSDP.

  The caveat does not occur if the MSDP timer is greater than 1.

  Workaround: Increase the MSDP timer to 5. (CSCsj61328)

Open Caveats in Cisco IOS Release 12.2(25)EWA12

This section lists the open caveats in Cisco IOS Release 12.2(25)EWA12:

- While configuring Smartport macros via HTTP interactively, a Catalyst 4500 series switch might restart unexpectedly.

  Workaround: Provide the entire command sequence in the browser "command" area as if you were entering the commands through the CLI. (CSCei76082)

- A Catalyst 4500 series switch upgrading to IOS versions 12.2(25)EWA or 12.2(31)SG might show unusual uptime in the output of the **show version** command:

  ```
  Switch uptime is 113 years, 43 weeks, 4 days, 7 hours, 53 minutes
  ```

  This does not impact the operation of the Catalyst 4500 series switch, appearing to be strictly cosmetic.

  Workaround: Power-cycle the switch. (CSCsg00796)

- When hardcoded duplex and speed settings are deleted after an interface shuts down, an "a-" is added to the duplex and speed in the output from the **show interface status** command.

  This does not impact performance.

  Workaround: Issue the **no shutdown** command. (CSCsg27395)

Resolved Caveats in Cisco IOS Release 12.2(25)EWA12

This section lists the resolved caveat in Cisco IOS Release 12.2(25)EWA12:

- If a switch has a redundant supervisor, under rare conditions you will observe the following situation: You first observe the *keepalive missing* warning messages. Then, after the keepalive protocol times out, a switchover to the standby supervisor engine occurs. **4500 only**

  This happens because the active and standby supervisor engines refer to the same seed metric for calculating the EOBC collision back off timer. Consequently, the EOBC channel might get locked in infinite collisions.

  Workaround: Upgrade the software to either:

  - Cisco IOS Release 12.2(31)SGA2 and higher, or
  - Cisco IOS Release 12.2(37)SG and higher

  (CSCsh44170)

- When connecting an end device installed with Intel 82471 to a 10/100/1000BaseTX port on a Catalyst 4948 switch with both sides (the switch port and the end device) set to auto, the speed downshifts from 1000 to 100 in autonegotiate mode when the switch side reloads and the end device is *still alive* (powered on and functional).

  The problem is not observed if the third party device reloads while the switch is *still alive*.

  Workaround: Enter the **shutdown** command followed by a **no shutdow**n command on the switch port. (CSCsk54053)

- On a Cisco router that functions as an ISR configured for OSPF, shortly after OSPF adjacencies come up, the router crashes because of a bus error.

  Workaround: Either enter the **area 0** command in the OSPF VRF process or enter the **no capability transit** command in the OSPF VRF process. (CSCsi84089)

- On a Catalyst 4948 switch running Cisco IOS Release 12.2(31)SGA, after removing and reinserting the fiber cable into the SFP, the link may not come up immediately.

  Workaround: Either remove and reinsert the SFP or issue a **shutdown** command followed by the **no shutdown** command on the affected Catalyst 4948 interface. CSCsj67573

- Typically, in Cisco IOS Releases 12.2(25)EWA10, 12.2(25)EWA11, 12.2(31)SG, and 12.2(31)SGA1, the output of the **show power inline** command is unexpectedly high:

  ```
  Switch# show power inline Fast 5/3
  Available:1400(w)  Used:4294847(w)  Remaining:-4293447(w)
  ```

```
Interface Admin  Oper            Power(Watts)     Device              Class
                              From PS    To Device
--------- ------ ---------- ---------- ---------- ------------------- -----

Fa5/3     auto   on         429496     42944.     IP Phone 7961       2
```

As a result of this issue, you might observe log messages like the following:

```
%C4K_IOSMODPORTMAN-4-INLINEPOWEROVERWARNING: Inline power exceeds threshold: Module
status changed to 'Pwr Over'

%C4K_IOSMODPORTMAN-6-INLINEPOWEROK: Inline power within limits: Module status changed
to 'Ok'

%C4K_IOSMODPORTMAN-6-MODULEONLINE: Module 6 (WS-X4548-GB-RJ45V S/N: JAExxxxxxxx Hw:
3.3) is online
```

Workaround: Either downgrade to Cisco IOS Release 12.2(25)EWA9 or an earlier release, or upgrade to Cisco IOS Release 12.2(31)SGA2 and later releases, or Cisco IOS Release 12.2(37)SG. (CSCsj47170)

- When you add the **ip ssh ver 2** command to the configuration of the primary supervisor engine and you *fail over* to the secondary supervisor engine, the command is present in the configuration of the secondary supervisor engine. However, when you *fail back* to the primary supervisor engine, the command disappears from the configuration of the primary supervisor engine, affecting your SSH sessions.

  Workaround: None. (CSCsj51666)

Open Caveats in Cisco IOS Release 12.2(25)EWA11

This section lists the open caveats in Cisco IOS Release 12.2(25)EWA11:

- While configuring Smartport macros via HTTP interactively, a Catalyst 4500 series switch might restart unexpectedly.

  Workaround: Provide the entire command sequence in the browser "command" area as if you were entering the commands through the CLI. (CSCei76082)

- A Catalyst 4500 series switch upgrading to IOS versions 12.2(25)EWA or 12.2(31)SG might show unusual uptime in the output of the **show version** command:

  ```
  Switch uptime is 113 years, 43 weeks, 4 days, 7 hours, 53 minutes
  ```

  This does not impact the operation of the Catalyst 4500 series switch, appearing to be strictly cosmetic.

  Workaround: Power-cycle the switch. (CSCsg00796)

- A Catalyst 4500 series switch running Cisco IOS Release 12.(25)EWA8 will send in dot1q tagged cdp packets when dot1x is enabled on a voice VLAN port. This might cause gigabit IP phones to send in packets that are untagged, moving the phone into the data VLAN.

  Workaround: Do either of the following:

  - Remove dot1x from the port.
  - Upgrade the IOS image to Cisco IOS 12.2(31)SGA or later.

  (CSCsg10135)

- When hardcoded duplex and speed settings are deleted after an interface shuts down, an "a-" is added to the duplex and speed in the output from the **show interface status** command.

  This does not impact performance.

  Workaround: Issue the **no shutdown** command. (CSCsg27395)

- A Catalyst 4500 series switch might experience high CPU utilization due to the Cat4k Mgmt LoPri process and the K2CpuMan and K2L2 Address Table reviews (using the **show platform health** command.

  High CPU utilization does not impact the traffic switched in hardware.

  The problem is seen when a large MAC address table exists and when the switch is frequently relearning MAC addresses on multiple VLANs. Enabling the **service internal** command followed by the **debug platform log feature k2l2addresstable** command will display output similar to the following:

Note Do not enable these commands on a production switch unless instructed by Cisco TAC.

```
*Nov 13 12:56:32.066 CLT-1: K2L2AddressTableMan::newEntry index 61956 vlan 1020
address 00:D0:02:2D:38:1A
*Nov 13 12:56:34.030 CLT-1: K2L2AddressTableMan::deleteEntry index 55620 vlan 1010
address 00:D0:02:2D:38:1A
*Nov 13 12:56:34.046 CLT-1: K2L2AddressTableMan::newEntry index 55620 vlan 1010
address 00:D0:02:2D:38:1A
*Nov 13 12:56:34.062 CLT-1: K2L2AddressTableMan::deleteEntry index 61956 vlan 1020
address 00:D0:02:2D:38:1A
```

  Workaround: None. (CSCsg76868)

- If a switch has a redundant supervisor, under rare conditions you will observe the following situation: You first observe the *keepalive missing* warning messages. Then, after the keepalive protocol times out, a switchover to the standby supervisor engine ocuurs. **4500 only**

  This happens because the active and standby supervisor engines refer to the same seed metric for calculating the EOBC collision back off timer. Consequently, the EOBC channel might get locked in infinite collisions.

  Workaround: Upgrade the software to either:

  – Cisco IOS Release 12.2(31)SGA2 and higher, or

  – Cisco IOS Release 12.2(37)SG and higher

  (CSCsh44170)

Resolved Caveats in Cisco IOS Release 12.2(25)EWA11

This section lists the resolved caveat in Cisco IOS Release 12.2(25)EWA11:

- In software releases 12.2(25)EWA10, 12.2(31)SGA2 and 12.2(31)SGA3, PoE Health Monitoring Diagnostic software introduced via CSCsf26804 *incorrectly* reports PoE errors for module WS-X4548-GB-RJ45V, hardware revision 4.0. (Use the **show module** command to see the hardware revision of module.) The software reloads the PoE module continuously, and the module will not operate.

  WS-X4548-GB-RJ45V with hardware revision 4.0 is NOT impacted by the problem reported in CSCsf26804 hence PoE health Monitor checks are not applicable to the module.

Workaround: None.

This caveat is fixed in 12.2(25)EWA11 and 12.2(31)SGA4 software releases.

Release 12.2(37)SG is other recommended software release. 12.2(37)SG does not have the fix for CSCsf26804 and hence does not run into CSCsk85158.

A linecard replacement is *not* needed. *Do not* RMA the module. (CSCsk85158)

Open Caveats in Cisco IOS Release 12.2(25)EWA10

This section lists the open caveats in Cisco IOS Release 12.2(25)EWA10:

- While configuring Smartport macros via HTTP interactively, a Catalyst 4500 series switch might restart unexpectedly.

  Workaround: Provide the entire command sequence in the browser "command" area as if you were entering the commands through the CLI. (CSCei76082)

- A Catalyst 4500 series switch upgrading to IOS versions 12.2(25)EWA or 12.2(31)SG might show unusual uptime in the output of the **show version** command:

  ```
  Switch uptime is 113 years, 43 weeks, 4 days, 7 hours, 53 minutes
  ```

  This does not impact the operation of the Catalyst 4500 series switch, appearing to be strictly cosmetic.

  Workaround: Power-cycle the switch. (CSCsg00796)

- A Catalyst 4500 series switch running Cisco IOS Release 12.(25)EWA8 will send in dot1q tagged cdp packets when dot1x is enabled on a voice VLAN port. This might cause gigabit IP phones to send in packets that are untagged, moving the phone into the data VLAN.

  Workaround: Do either of the following:

  - Remove dot1x from the port.
  - Upgrade the IOS image to Cisco IOS 12.2(31)SGA or later.

  (CSCsg10135)

- When hardcoded duplex and speed settings are deleted after an interface shuts down, an "a-" is added to the duplex and speed in the output from the **show interface status** command.

  This does not impact performance.

  Workaround: Issue the **no shutdown** command. (CSCsg27395)

- A Catalyst 4500 series switch might experience high CPU utilization due to the Cat4k Mgmt LoPri process and the K2CpuMan and K2L2 Address Table reviews (using the **show platform health** command.

  High CPU utilization does not impact the traffic switched in hardware.

  The problem is seen when a large MAC address table exists and when the switch is frequently relearning MAC addresses on multiple VLANs. Enabling the **service internal** command followed by the **debug platform log feature k2l2addresstable** command will display output similar to the following:

Note Do not enable these commands on a production switch unless instructed by Cisco TAC.

```
*Nov 13 12:56:32.066 CLT-1: K2L2AddressTableMan::newEntry index 61956 vlan 1020
address 00:D0:02:2D:38:1A
*Nov 13 12:56:34.030 CLT-1: K2L2AddressTableMan::deleteEntry index 55620 vlan 1010
address 00:D0:02:2D:38:1A
*Nov 13 12:56:34.046 CLT-1: K2L2AddressTableMan::newEntry index 55620 vlan 1010
address 00:D0:02:2D:38:1A
*Nov 13 12:56:34.062 CLT-1: K2L2AddressTableMan::deleteEntry index 61956 vlan 1020
address 00:D0:02:2D:38:1A
```

Workaround: None. (CSCsg76868)

- If a switch has a redundant supervisor, under rare conditions you will observe the following situation: You first observe the *keepalive missing* warning messages. Then, after the keepalive protocol times out, a switchover to the standby supervisor engine ocuurs. **4500 only**

  This happens because the active and standby supervisor engines refer to the same seed metric for calculating the EOBC collision back off timer. Consequently, the EOBC channel might get locked in infinite collisions.

  Workaround: Upgrade the software to either:

  – Cisco IOS Release 12.2(31)SGA2 and higher, or

  – Cisco IOS Release 12.2(37)SG and higher

  (CSCsh44170)

- In software releases 12.2(25)EWA10, 12.2(31)SGA2 and 12.2(31)SGA3, PoE Health Monitoring Diagnostic software introduced via CSCsf26804 *incorrectly* reports PoE errors for module WS-X4548-GB-RJ45V, hardware revision 4.0. (Use the **show module** command to see the hardware revision of module.) The software reloads the PoE module continuously, and the module will not operate.

  WS-X4548-GB-RJ45V with hardware revision 4.0 is NOT impacted by the problem reported in CSCsf26804 hence PoE health Monitor checks are not applicable to the module.

  Workaround: None.

  This caveat is fixed in 12.2(25)EWA11 and 12.2(31)SGA4 software releases.

  Release 12.2(37)SG is other recommended software release. 12.2(37)SG does not have the fix for CSCsf26804 and hence does not run into CSCsk85158.

  A linecard replacement is *not* needed. *Do not* RMA the module. (CSCsk85158)

Resolved Caveats in Cisco IOS Release 12.2(25)EWA10

This section lists the resolved caveats in Cisco IOS Release 12.2(25)EWA10:

- On PoE line cards connected to IP phones or other PoE networking devices, you might see a S2W console warning message indicating that the POE devices are either not responding to polling from the supervisor or the devices are in an an error state. When this situation exists, PoE service may not work correctly. For instance, phones will not have power or power will be removed intermittently from some ports.

  This might happen for the following reasons:

  – There is a marginal and/or failing component(s) on the line card (requires RMA and EFA).

  – The hardware and software states are not synchronized due to a power *glitch* or to a reset of the -48V PoE.

This situation occurs on Cisco IOS Release 12.2(31)SGA1 or lower (except for Cisco IOS Release 12.2(25)EWA10).

Note This situation does not exist on the WS-X4148-RJ45V.

Workaround: Download an image that supports PoE Health Monitoring such as Cisco IOS Release 12.2(37)SG, 12.2(31)SGA2, or 12.2(25)EWA10. These software images have code that will monitor, detect, and attempt to correct random S2W errors. Although this code does not prevent the problem, it will positively identify the issue and and reduce recovery time.

If you experience three HealthCheck warning messages within a week, RMA the line card immediately, and request an Engineer Failure Analysis (EFA) report. Perform the following debugging steps if your IP phone or PoE device fails:

Step 1 Determine if the IP phone works using other ports on the same line card.

Step 2 Determine if the same IP phone works using another line card(s) within the switch.

Step 3 Capture **show tech-support** and **show platform chassis module** *module*.

Step 4 Reset the linecard by issuing **hw-module module** *module* **reset** or by removing and reinserting the line card. Determine if the IP phone receives power from the switch.

Step 5 Capture **show tech-support** and **show platform chassis module** *module*.

Step 6 RMA the line card if the problem persists with RMA. Ask the TAC engineer to create an EFA.

(CSCsf26804) **4500 only**

- If IGMP snooping and multicast routing are configured on a Catalyst 4500 series switch, and the switch is acting as a group querier and receives an IGMP group-specific query, the switch clears the entry from its IGMP group membership table after two seconds.

  Workaround: Upgrade to Cisco IOS Release 12.2(31)SGA2 or 12.2(25)EWA10. (CSCsh65870)

- Windows XP PCs configured for machine authentication and PEAP may not receive an updated IP address from the DHCP server based on user credentials if the PC has been machine authenticated and can ping its previously assigned default gateway.

  Workaround: Upgrade to Cisco IOS Release 12.2(25)EWA10 or 12.2(31)SGA2. (CSCsi34572)

- The RADIUS attribute 32 is not being sent to the RADIUS server for Cisco IOS Release 12.2(31)SG and beyond.

  Workaround: Downgrade to Cisco IOS Release 12.2(25)EWA10, if feasible. (CSCsi22041)

- For switches running IOS software prior to Release 12.2(25)EWA10, DHCP snooping syslog statistics may not be sufficient for some debugging scenarios..

  Workaround: Upgrade to Cisco IOS Release 12.2(25)EWA10. (CSCsg91116)

- Cisco IOS and Cisco IOS XR contain a vulnerability when processing specially crafted IPv6 packets with a Type 0 Routing Header present. Exploitation of this vulnerability can lead to information leakage on affected Cisco IOS and Cisco IOS XR devices, and may also result in a crash of the affected Cisco IOS device. Successful exploitation on an affected device running Cisco IOS XR will not result in a crash of the device itself, but may result in a crash of the IPv6 subsystem.

  Cisco has made free software available to address this vulnerability for affected customers. There are workarounds available to mitigate the effects of the vulnerability.

This advisory is posted at

http://www.cisco.com/warp/public/707/cisco-sa-20070808-IOS-IPv6-leak.shtml.

(CSCef77013)

- The Cisco Next Hop Resolution Protocol (NHRP) feature in Cisco IOS contains a vulnerability that can result in a restart of the device or possible remote code execution.

  NHRP is a primary component of the Dynamic Multipoint Virtual Private Network (DMVPN) feature.

  NHRP can operate in three ways: at the link layer (Layer 2), over Generic Routing Encapsulation (GRE) and multipoint GRE (mGRE) tunnels and directly on IP (IP protocol number 54). This vulnerability affects all three methods of operation.

  NHRP is not enabled by default for Cisco IOS.

  This vulnerability is addressed by Cisco bug IDs CSCin95836 for non-12.2 mainline releases and CSCsi23231 for 12.2 mainline releases.

  This advisory is posted at

  http://www.cisco.com/warp/public/707/cisco-sa-20070808-nhrp.shtml.

  (CSCin95836)

- The server side of the Secure Copy (SCP) implementation in Cisco IOS contains a vulnerability that allows any valid user, regardless of privilege level, to transfer files to and from an IOS device that is configured to be a Secure Copy server. This vulnerability could allow valid users to retrieve or write to any file on the device's filesystem, including the device's saved configuration. This configuration file may include passwords or other sensitive information.

  The Cisco IOS Secure Copy Server is an optional service that is disabled by default. Devices that are not specifically configured to enable the Cisco IOS Secure Copy Server service are not affected by this vulnerability.

  This vulnerability does not apply to the Cisco IOS Secure Copy Client feature.

  This advisory is posted at

  http://www.cisco.com/warp/public/707/cisco-sa-20070808-scp.shtml.

  (CSCsc19259)

Open Caveats in Cisco IOS Release 12.2(25)EWA9

This section lists the open caveats in Cisco IOS Release 12.2(25)EWA9:

- While configuring Smartport macros via HTTP interactively, a Catalyst 4500 series switch might restart unexpectedly.

  Workaround: Provide the entire command sequence in the browser "command" area as if you were entering the commands through the CLI. (CSCei76082)

- A Catalyst 4500 series switch upgrading to IOS versions 12.2(25)EWA or 12.2(31)SG might show unusual uptime in the output of the **show version** command:

  ```
  Switch uptime is 113 years, 43 weeks, 4 days, 7 hours, 53 minutes
  ```

  This does not impact the operation of the Catalyst 4500 series switch, appearing to be strictly cosmetic.

  Workaround: Power-cycle the switch. (CSCsg00796)

- A Catalyst 4500 series switch running Cisco IOS Release 12.(25)EWA8 will send in dot1q tagged cdp packets when dot1x is enabled on a voice VLAN port. This might cause gigabit IP phones to send in packets that are untagged, moving the phone into the data VLAN.

  Workaround: Do either of the following:

  - Remove dot1x from the port.
  - Upgrade the IOS image to Cisco IOS 12.2(31)SGA or later.

  (CSCsg10135)

- When hardcoded duplex and speed settings are deleted after an interface shuts down, an "a-" is added to the duplex and speed in the output from the **show interface status** command.

  This does not impact performance.

  Workaround: Issue the **no shutdown** command. (CSCsg27395)

Resolved Caveats in Cisco IOS Release 12.2(25)EWA9

This section lists the resolved caveats in Cisco IOS Release 12.2(25)EWA9:

- When you telnet to a switch and configure the **autocommand-options nohangup** command on line vty 0 4, it will disappear once you exit. (If you look at the running configuration from the console connection, the command is not present.) This does not impact vty 5 15.

  Workaround: Open 6 telnet sessions. (CSCsg41842)

- When UDP Small Servers is enabled on an HSRP active router and it receives a UDP ECHO to the virtual ip address, the router fails to echo back by LOOPPAK.

  Workaround: None. (CSCsh13542)

- If you resume another Secure Shell (SSH) session after disconnecting an SSH session, the client console or vty will not respond until the server disconnects the session.

  Workaround: None. (CSCsd76601)

- While either initiating a Secure Shell (SSH) session from a router or copying a file to/from the router via SCP, a router may reload due to software forced crash.

  Prior to the crash, the router logs a series of %SYS-3-CPUHOG messages and will eventually crash displaying the %SYS-2-WATCHDOG message:

```
*Mar 29 11:29:35.938: %SYS-3-CPUHOG: Task is running for (128004)msecs, more
than (2000)msecs
(1426/5),process = Virtual Exec.
-Traceback= 0x41DC8E2C 0x41DC9098 0x41BAA6E0 0x41BA6990 0x41B96B4C 0x41BA6768
0x41BA7490 0x41BA7750
0x41BAC854 0x41BA120C 0x40C27024 0x40C26760 0x41BA203C 0x40C73E58 0x40C926E8
0x41834200

*Mar 29 11:29:35.942: %SYS-2-WATCHDOG: Process aborted on watchdog timeout,
process = Virtual Exec.
-Traceback= 0x41A23CC8 0x41BAA3D8 0x41BA6A08 0x41B96B4C 0x41BA6768 0x41BA7490
0x41BA7750 0x41BAC854
0x41BA120C 0x40C27024 0x40C26760 0x41BA203C 0x40C73E58 0x40C926E8 0x41834200
0x418341E4

%Software-forced reload
```

  Workaround: Do not initiate SSH or SCP sessions from the router. (CSCsb54378)

- When you remove the **radius-server source-ports 1645-1646** default command, the switch sends the RADIUS requests with the wrong source port, causing the authentication attempts to fail.

  Workaround: Ensure that the **radius-server source-ports 1645-1646** command is configured and reload the switch. Upon boot-up, the command will be in the running-config and communication with the RADIUS server will resume. (CSCsh22161)

- Memory corruption may occur if a EIGRP stub with static routes is configured on the switch, causing the switch to crash. Symptoms include console messages similar to the following:

```
Aug 23 15:43:45: %SYS-2-BADSHARE: Bad refcount in mem_lock, ptr=43258E68,
count=FFFF8000

Traceback= 409201A8 4007AE28 40A1D418 40A2263C 40A24610 40A25600 40C309D4 40C30D74
40C3CBB0CMD:
```

  Workaround: Unconfigure the EIGRP stub with static routes. (CSCef26340)

- A memory leak may occur if a switch is configured as a RADIUS client and receives invalid RADIUS packets. The switch will not have enough packet memory to receive incoming ARP packets destined for the CPU, and ARP entries will be incomplete.

  Workaround: Disable the port that is receiving invalid RADIUS packets. (CSCeh84727)

- If the ACL configured on an SVI is too large for the TCAM, ARP replies for the associated VLAN may not be processed.

  Workaround: Upgrade to Cisco IOS Release 12.2(31)SGA and resize the TCAM with the **access-list hardware region balance** command to support the ACL. Verify TCAM utilization with the **show platform hardware acl statistics utilization brief** command. (CSCsh50565)

- Cisco IOS device may crash while processing malformed Secure Sockets Layer (SSL) packets. In order to trigger these vulnerabilities, a malicious client must send malformed packets during the SSL protocol exchange with the vulnerable device.

  Successful repeated exploitation of any of these vulnerabilities may lead to a sustained Denial-of-Service (DoS); however, vulnerabilities are not known to compromise either the confidentiality or integrity of the data or the device. These vulnerabilities are not believed to allow an attacker will not be able to decrypt any previously encrypted information.

  Cisco IOS is affected by the following vulnerabilities:

  - Processing ClientHello messages, documented as Cisco bug ID CSCsb12598
  - Processing ChangeCipherSpec messages, documented as Cisco bug ID CSCsb40304
  - Processing Finished messages, documented as Cisco bug ID CSCsd92405

  Cisco has made free software available to address these vulnerabilities for affected customers. There are workarounds available to mitigate the effects of these vulnerabilities.

  This advisory is posted at http://www.cisco.com/warp/public/707/cisco-sa-20070522-SSL.shtml.

Note Another related advisory has been posted with this advisory. This additional advisory also describes a vulnerability related to cryptography that affects Cisco IOS. This related advisory is available at the following link: http://www.cisco.com/warp/public/707/cisco-sa-20070522-crypto.shtml.

  A combined software table for Cisco IOS is available to aid customers in choosing a software releases that fixes all security vulnerabilities published as of May 22, 2007. This software table is available at the following link: http://www.cisco.com/warp/public/707/cisco-sa-20070522-cry-bundle.shtml.

(CSCsb12598)

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(CSCsb40304)

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(CSCsd92405)

Open Caveats in Cisco IOS Release 12.2(25)EWA8

This section lists the open caveats in Cisco IOS Release 12.2(25)EWA8:

- While configuring Smartport macros via HTTP interactively, a Catalyst 4500 series switch might restart unexpectedly.

  Workaround: Provide the entire command sequence in the browser "command" area as if you were entering the commands through the CLI. (CSCei76082)

- A Catalyst 4500 series switch upgrading to IOS versions 12.2(25)EWA or 12.2(31)SG might show unusual uptime in the output of the **show version** command:

  ```
  Switch uptime is 113 years, 43 weeks, 4 days, 7 hours, 53 minutes
  ```

  This does not impact the operation of the Catalyst 4500 series switch, appearing to be strictly cosmetic.

  Workaround: Power-cycle the switch. (CSCsg00796)

- A Catalyst 4500 series switch running Cisco IOS Release 12.(25)EWA8 will send in dot1q tagged cdp packets when dot1x is enabled on a voice VLAN port. This might cause gigabit IP phones to send in packets that are untagged, moving the phone into the data VLAN.

  Workaround: Do either of the following:

  - Remove dot1x from the port.
  - Upgrade the IOS image to Cisco IOS 12.2(31)SGA or later.

  (CSCsg10135)

- When hardcoded duplex and speed settings are deleted after an interface shuts down, an "a-" is added to the duplex and speed in the output from the **show interface status** command.

  This does not impact performance.

  Workaround: Issue the **no shutdown** command. (CSCsg27395)

- If the ACL configured on an SVI is too large for the TCAM, ARP replies for the associated VLAN may not be processed.

  Workaround: Upgrade to Cisco IOS Release 12.2(31)SGA and resize the TCAM with the **access-list hardware region balance** command to support the ACL. Verify TCAM utilization with the **show platform hardware acl statistics utilization brief** command. (CSCsh50565)

Resolved Caveats in Cisco IOS Release 12.2(25)EWA8

This section lists the resolved caveats in Cisco IOS Release 12.2(25)EWA8:

In a switch running Cisco IOS Release 12.2(25)EWA8, the following symptoms might be observed.

- ARP does not resolve for directly-connected devices, impacting connectivity and preventing routing protocols from forming an adjacency.
- If UDLD "aggressive" is enabled, ports will err-disable due to UDLD, causing messages like the following to display:

```
%UDLD-4-UDLD_PORT_DISABLED: UDLD disabled interface Gi3/1, unidirectional link
detected
%PM-4-ERR_DISABLE: udld error detected on Gi3/1, putting Gi3/1 in err-disable
state
```

Note Because UDLD is merely a symptom of the problem rather than the cause, disabling UDLD will not solve the problem.

- Slow memory leak, causing messages (with tracebacks) like the following to display:

```
%SYS-2-MALLOCFAIL: Memory allocation of 784 bytes failed from 0xXXXXXX, alignment
8
Pool: Processor  Free: 36  Cause: Not enough free memory Alternate Pool: None
Free: 0  Cause: No
Alternate pool -Process= "<Process_name>", ipl= 0, pid= 49 -Traceback=
0xXXXXXX
```

  Messages such as the following would be seen on the console

```
%% Low on memory; try again later
```

If one of the symptoms is observed, capture an output of the **show tech** command along with 4-5 snapshots of the following commands (over a 10 minute interval) and open a TAC Service request:

- **show plat cpu packet driver**
- **show plat cpu pack stat**
- **show platform health**
- **show mem summary**
- **show process memory**

Workaround: Downgrade to Cisco IOS Release 12.2(25)EWA6. (CSCsh25687)

- Starting in calendar year 2007, daylight savings summer-time rules may cause Cisco IOS to generate timestamps (such as in syslog messages) that are off by one hour.

  By default, the Cisco IOS configuration command uses United States standards for daylight savings time rules:

  clock summer-time *zone* **recurring**

  The Energy Policy Act of 2005 (H.R.6.ENR), Section 110 changes the start date from the first Sunday of April to the second Sunday of March, and it changes the end date from the last Sunday of October to the first Sunday of November.

  Workaround: Use the **clock summer-time** command to manually configure the proper start and end date for daylight savings time. After the summer-time period for calendar year 2006 ends, you can configure the following for the US/Pacific time zone:

  clock summer-time *PDT* **recurring** *2 Sun Mar 2:00 1 Sun Nov 2:00*

(CSCsg70355)

Note Using NTP is not a workaround to this problem, because it does not carry any information about timezones or summertime.

Open Caveats in Cisco IOS Release 12.2(25)EWA7

This section lists the open caveats in Cisco IOS Release 12.2(25)EWA7:

- While configuring Smartport macros via HTTP interactively, a Catalyst 4500 series switch might restart unexpectedly.

  Workaround: Provide the entire command sequence in the browser "command" area as if you were entering the commands through the CLI. (CSCei76082)

- A Catalyst 4500 series switch upgrading to IOS versions 12.2(25)EWA or 12.2(31)SG might show unusual uptime in the output of the **show version** command:

  ```
  Switch uptime is 113 years, 43 weeks, 4 days, 7 hours, 53 minutes
  ```

  This does not impact the operation of the Catalyst 4500 series switch, appearing to be strictly cosmetic.

  Workaround: Power-cycle the switch. (CSCsg00796)

- A Catalyst 4500 series switch running Cisco IOS Release 12.(25)EWA8 will send in dot1q tagged cdp packets when dot1x is enabled on a voice VLAN port. This might cause gigabit IP phones to send in packets that are untagged, moving the phone into the data VLAN.

  Workaround: Do either of the following:

  - Remove dot1x from the port.
  - Upgrade the IOS image to Cisco IOS 12.2(31)SGA or later.

  (CSCsg10135)

- When hardcoded duplex and speed settings are deleted after an interface shuts down, an "a-" is added to the duplex and speed in the output from the **show interface status** command.

  This does not impact performance.

  Workaround: Issue the **no shutdown** command. (CSCsg27395)

Resolved Caveats in Cisco IOS Release 12.2(25)EWA7

This section lists the resolved caveats in Cisco IOS Release 12.2(25)EWA7:

- When VRF Packet Leaking is configured on a Catalyst 4500 series switch with a Supervisor Engine IV, a packet loss of 50 per cent occurs when you ping a VRF interface IP address from a device in the global table.

  Packets forwarded by the switch are not impacted.

  Workaround: None. (CSCej36831)

- If you running Cisco IOS Release 12.2(25)EWA5 on a Catalyst 4500 series switch, after reloading an "ip ftp source-interface <physical port>" configuration, it is impossible to upload the configuration to the FTP Server with the **copy running-config ftp** command.

Workaround: Issue the **ip ftp source-interface <loopback port>** command rather than the **ip ftp source-interface <physical port>** command. (CSCsd22662)

- Reconfiguring a heavily-used policy map on a Catalyst 4500 series switch may cause the switch to crash.

  This issue impacts Cisco IOS Releases 12.2(25)EWA3, 12.2(25)EWA4, 12.2(25)EWA5, 12.2(25)EWA6, 12.2(25)SG and 12.2(31)SG.

  Workaround: Remove the policy-map from all interfaces before reconfiguring its contents. Also ensure that no configuration is made in parallel that might result in concurrent modification of configured interface's state. (CSCse80948)

- Configuring an ACL on a port configured with the **switchport access vlan dynamic** command will cause the Catalyst 4500 series switch to crash.

  This issue impacts Catalyst 4500 series switches running IOS release including and prior to 12.2(31)SGA and 12.2(25)EWA6.

  Workaround: None. (CSCsg03745)

- GARP-based protocol packets leak through the STP block. In a redundant topology, this might lead to a GARP storm.

  Workaround: Use Hardware Control Plane Policing (CoPP) to police GARP packets. (CSCsg08775)

- A reload of a Catalyst 4500 series switch may cause neighbour switches connected over WS-X4448-GE modules to errdisable their links to the switch because of too many link flaps.

  Workaround: Configure “errdisable recovery cause link-flap” on the connected switches. (CSCsd55376)

- When the **clear arp snmp** command is sent to a Catalyst 4500 series switch running Cisco IOS Release 12.2(25)EWA4, the switch may reset.

  This issue impacts Catalyst 4500 series switches running IOS releases including and prior to 12.2(31)SG and 12.2(25)EWA6.

  Workaround: None. (CSCse49277)

- When there are numerous non-RPF multicast groups and the incoming rate of multicast traffic is high, the Catalyst 4500 series switch does not trigger a PIM Assert for some multicast groups immediately after receiving multicast packets on non-RPF interface.

  Workaround: None. (CSCse56839)

- While running Cisco IOS Release 12.2(25)EWA6 on either the Catalyst 4500 series switch, the 4013+TS supervisor engine, or the 4306-GB-T linecard, you might experience the following problem on RJ45 ports:
  - At 1Gbps, the ports cannot sustain the linerate when sending packets greater than 6656 bytes.
  - In rare situations, the TxQueue's associated with the RJ45 ports may get stuck when the packets of greater than 6656 bytes are involved and the port is operating at 10Mbps, 100Mbps, or 1Gbps. You would see the following type of messages:

    ```
    Aug  1 04:46:01 CDT: %C4K_HWPORTMAN-4-BLOCKEDTXQUEUE: Blocked transmit queue
    HwTxQId1
    on Switch Phyport Gi1/35, count=1784
    Aug  1 04:46:12 CDT: Current Freelist count 5629. Fell below threshold 601 times
    consecutively
    Aug  1 04:46:42 CDT: Current Freelist count 5629. Fell below threshold 1202 times
    consecutively
    ```

Workaround: Use packets sizes less than or equal to 6656 bytes or use Cisco IOS Release 12.2(25)EWA5 until the fix is available in subsequent releases. The fix will be available in 12.2(25)EWA7 release onwards. (CSCse29295)

- On a Catalyst 4500 series switch with an IOS-based supervisor engine running Cisco IOS Release 12.2(25)EWA6 or earlier, some linecards may boot as faulty, including:
  - WS-X4448-GB-RJ45,
  - WS-X4448-GB-LX,
  - WS-4448-GB-SFP,
  - WS-X4548-GB-RJ45,
  - WS-X4548-GB-RJ45V,
  - WS-X4424-GB-RJ45,
  - WS-X4524-GB-RJ45V.

  The **show diagnostic result module 2 test all detail** command returns the following:

```
Test results: (. = Pass, F = Fail, U = Untested)

  _______________________________________________________________________________?

    1) linecard-online-diag --------------------> F <<--

          Error code --------------------------> 4 (DIAG_PARTIAL_FAILURE) <<---
          Total run count ---------------------> 1
          Last test execution time ------------> Jul 12 2006 12:11:29
          First test failure time -------------> Jul 12 2006 12:11:29
          Last test failure time --------------> Jul 12 2006 12:11:29
          Last test pass time -----------------> n/a
          Total failure count -----------------> 1
          Consecutive failure count -----------> 1

Slot Ports Card Type                                Diag Status      Diag Details
---- ----- ---------------------------------------- ---------------- ------------
 2    48   10/100/1000BaseT (RJ45)V, Cisco/IEEE   Partial Failure  Port failure

Detailed Status
---------------
. = Pass              U = Unknown
L = Loopback failure  S = Stub failure
I = Ilc failure       P = Port failure
E = SEEPROM failure   G = GBIC integrity check failure


Ports 1   2   3   4   5   6   7   8   9   10  11  12  13  14  15  16
      S   S   S   S   S   S   S   S   .   .   .   .   .   .   .   .

Ports 17  18  19  20  21  22  23  24  25  26  27  28  29  30  31  32
      .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .

Ports 33  34  35  36  37  38  39  40  41  42  43  44  45  46  47  48
      .   .   .   .   .   .   .   .   .   .   .   .   .   .   .   .
<snip>
```

You can verify the failure by looking at the output of the **show platform software interface** <*failed_port*> **stub internal** command for any of the faulty ports. The output should include the following:

```
Lemans 2-1(Gi2/1-8) Statistics for Port 0
Symbol Error Counter Reg 0          : 0xFFFFFFFFFFFFFFFF
Symbol Error Counter Reg 1          : 0xFFFFFFFFFFFFFFFF
Symbol Error Counter Reg 2          : 0xFFFFFFFFFFFFFFFF
Symbol Error Counter Reg 3          : 0xFFFFFFFFFFFFFFFF
Symbol Error Counter Reg 4          : 0x0000FFFFFFFF0000
Pause Frame Invalid Opcode Reg 0    : 0xFFFFFFFFFFFFFFFF
Pause Frame Invalid Opcode Reg 1    : 0xFFFFFFFFFFFFFFFF
Pause Frame Invalid Opcode Reg 2    : 0xFFFFFFFFFFFFFFFF
Pause Frame Invalid Opcode Reg 3    : 0xFFFFFFFFFFFFFFFF
Transmit No Buffer Reg 0            : 0xFFFFFFFFFFFFFFFF
Transmit No Buffer Reg 1            : 0xFFFFFFFFFFFFFFFF
Transmit No Buffer Reg 2            : 0xFFFFFFFFFFFFFFFF
Transmit No Buffer Reg 3            : 0xFFFFFFFFFFFFFFFF
```

If the Symbol Error Count Reg 4 is NOT *0xFFFFFFFFFFFFFFFF* then the faulty condition can be attributed to this bug.

Workaround: Reset the module's status with the **hw-module module reset** command. (CSCse80413)

- If a Catalyst 4500 series switch running Cisco IOS Release 12.2(31)SG is configured with Port Security and Cisco IP Phones are connected to the switchports, the CPU might be higher than expected. In the output of the **show platform health** command, the process hogging the CPU would be the following

```
CAT4506#sh platform health | inc K2L2 Address
K2L2 Address Table R   2.00  27.08     12      5  100  500   15  23   19  4871:26
CAT4506##sh platform health | inc K2L2 Address
K2L2 Address Table R   2.00  34.92     12      5  100  500   38  25   19  4871:32
```

This process should not cause any forwarding issues.

Workaround: None. (CSCse72353)

- Reading the object dot1dTpLearnedEntryDiscards always returns zero.

Workaround: None. (CSCse66318)

- Applying an ACL to a Layer 3 interface on a Catalyst 4500 series switch that is too large to fit entirely in the TCAM, might cause valid arp replies to be installed incorrectly.

Workaround: Determine which portion of the TCAM is becoming saturated and resize it accordingly. This can be done by looking at the output of the **show plat hard acl statistics u brief** command:

```
                        Entries/Total(%)  Masks/Total(%)
                          ----------------  --------------
Input  Acl(PortAndVlan)     5 / 8112 (  0)     3 / 1014 (  0)
Input  Acl(PortOrVlan)   8105 / 8112 ( 99)  1014 / 1014 (100)
Input  Qos(PortAndVlan)     0 / 8128 (  0)     0 / 1016 (  0)
Input  Qos(PortOrVlan)      0 / 8128 (  0)     0 / 1016 (  0)
Output Acl(PortAndVlan)     0 / 8112 (  0)     0 / 1014 (  0)
Output Acl(PortOrVlan)      5 / 8112 (  0)     3 / 1014 (  0)
Output Qos(PortAndVlan)     0 / 8128 (  0)     0 / 1016 (  0)
Output Qos(PortOrVlan)      0 / 8128 (  0)     0 / 1016 (  0)
```

On a Catalyst 4500 series switch running Cisco IOS Release 12.2(31)SG or later, you can reize the TCAM allocation with the **access-list hardware region** [**feature/qos**] **in balance** [*percentage*] command. (CSCse53198)

- Upon reloading a Catalyst 4500 series switch configured with the **ip ftp source-interface** <*physical port*> command and running Cisco IOS Release 12.2(25)EWA5, it is impossible to upload a configuraton to the FTP Server by issuing the **copy running-config ftp** command.

  Workaround: Issue the **ip ftp source-interface** <*loopback port*>, instead of the **ip ftp source-interface** <*physical port*> command. (CSCsd22662)

- When a "shut/no shut" is performed on some ports of a Catalyst 4500 series switch, an adjacent port might drop some packets (less than 20).

  Workaround: Upgrade to Cisco IOS Release 12.2(25)EWA7 or later. (CSCsg02099)

- The link between WS-X4548-GB-RJ45 and WS-C3560-24PS might not come up (that is, both interfaces stay down) after reloading a Catalyst 4500 series switch with Supervisor Engine IV running Cisco IOS Release 12.2(25)EWA5 or 12.2(25)SG.

  This problem is not seen when WS-C3560-24PS is reloaded.

  Workaround: Do a "shut/no shut" on the interface. (CSCsd90837)

- A Catalyst 4500 series switch running Cisco IOS Release 12.2(25)EWA6, drops some ARP request packets in some VLANs.

  Workaround: None. (CSCsf16422)

- Ports on a WS-X4418-GB in a Catalyst 4500 switch may come up in half-duplex after the link is reset. This symptom is accompanied by logging duplex mismatch messages.

  The problem has been seen with connections between a WS-X4418-GB module and a Catalyst 3550 series switch, a Catalyst 3560 series switch, and a Catalyst 3500xl series switches.

  Workaround: Do a "shut/no shut" on the interface on WS-X4418-GB. (CSCsg21514)

- Cisco Catalyst 6000, 6500 series and Cisco 7600 series that have a Network Analysis Module installed are vulnerable to an attack, which could allow an attacker to gain complete control of the system. Only Cisco Catalyst systems that have a NAM on them are affected. This vulnerability affects systems that run Cisco IOS or Catalyst Operating System (CatOS).

  Cisco has made free software available to address this vulnerability for affected customers.

  A Cisco Security Advisory for this vulnerability is posted at http://www.cisco.com/warp/public/707/cisco-sa-20070228-nam.shtml.

  (CSCsd75273)

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  Cisco has made free software available to address this vulnerability for affected customers.

  A Cisco Security Advisory for this vulnerability is posted at http://www.cisco.com/warp/public/707/cisco-sa-20070228-nam.shtml.

  (CSCse52951)

Open Caveats in Cisco IOS Release 12.2(25)EWA6

This section lists the open caveats in Cisco IOS Release 12.2(25)EWA6:

- When you enter the **access-list N permit host hostname** command on a redundant chassis operating in SSO mode, you might observe the following syslog messages. The command is not synchronized with the redundant supervisor engine, and keepalive warnings appear.

```
000099: Jul  9 01:22:36.478 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000100: Jul  9 01:22:46.534 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000101: Jul  9 01:22:56.566 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000102: Jul  9 01:23:06.598 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000103: Jul  9 01:23:16.642 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000104: Jul  9 01:23:26.682 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000105: Jul  9 01:23:36.721 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000106: Jul  9 01:23:46.777 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000107: Jul  9 01:23:56.793 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
```

  Workaround: When using the **access-list N permit host hostname** command, specify the IP address of the host rather than the hostname (CSCef67489)

- While configuring Smartport macros via HTTP interactively, a Catalyst 4500 series switch might restart unexpectedly.

  Workaround: Provide the entire command sequence in the browser "command" area as if you were entering the commands through the CLI. (CSCei76082)

- When VRF Packet Leaking is configured on a Catalyst 4500 series switch with a Supervisor Engine IV, a packet loss of 50 per cent occurs when you ping a Catalyst 4500 series switch VRF interface IP address from a device in the global table.

  Packets forwarded by Catalyst 4500 series switch are not impacted.

  Workaround: None. (CSCej36831)

- When you insert gbics on a WS-X4448-GB-SFP running Cisco IOS Release 12.2(25)EWA2 on a WS-C4610R chassis, the output of **show interface status** and **show interface** displays "media type is No Gbic".

  Workaround: OIR the WS-X4448-GB-SFP. (CSCsd57960)

- While running Cisco IOS Release 12.2(25)EWA5, after reloading an "ip ftp source-interface <physical port>" configuration, it is impossible to upload the configuration to the FTP Server with the **copy running-config ftp** command.

  Workaround: Issue the **ip ftp source-interface <loopback port>** command rather than the **ip ftp source-interface <physical port>** command. (CSCsd22662)

- An active supervisor engine WS-X4516-10GE in a WS-C4510R chassis running Cisco IOS Release 12.2(25)EWA2 crashes when you replace the standby supervisor engine WS-X4516-10GE.

  Workaround: None. (CSCsd46408)

- When a third-party device is connected to a 1000BaseX interface and the link is shutdown/unshutdown, the autonegotiation process takes considerable time to complete and the link needs several minutes to come up again.

  Workaround: Disable autonegotiation or flow-control. (CSCse33607)

Resolved Caveats in Cisco IOS Release 12.2(25)EWA6

This section lists the resolved caveats in Cisco IOS Release 12.2(25)EWA6:

- On a Supervisor Engine V10-GE, when there are lot of flows in the system, an error message is logged to SYSLOG indicating that the netflow hardware table is full. The error message is misleading; the message states "flow table full" instead of "flow collisions."

  Workaround: None. (CSCeh97868)

- Occasionally, when a Catalyst 4500 series switch is in VTP client mode and “switchport trunk prunning vlan none” is configured on the trunk port, the trunk interface fails to send VLAN joins to the VTP server. Some of the VLAN is pruned on the link to the VTP server even when those VLANs are used.

  Workaround: Instead of using the "none" option, provide a specific VLAN when enabling VTP pruning on the trunk interface. (CSCei42957)

- After you initially boot a Catalyst 4500 series switch, if the input interface is in PIM dense mode, “s,g” multicast cast traffic is not forwarded to the intended destination even if that group is represented by a “*,g” on the system.

  Workaround: Issue the **clear ip mroute *** command multiple times. (CSCsb50317)

- A standby Supervisor Engine IV in SSO mode might restart in a Catalyst 4507R series switch running Cisco IOS Release 12.2(25)EWA.

  Workaround: None. (CSCsc41651)

- When PVLAN features (for example, PVLAN QoS) are applied on a trunk port for a number of VLANs and later removed from some VLANs, the features may be reprogrammed for all other VLANs. While the reprogramming is in progress, you might see some log message indicating that the features could not be programmed for some of the VLANs.

  Workaround: Remove the features and reapply. For PVLAN QoS, issuing a **no qos** and **qos** command will help. (CSCsc61449)

- On Cisco IOS Release 12.2(25)EWA4 and 12.2(25)EWA5, the system may crash during modification of a policy map attached to an interface with the **set ip {dscp|ip|precedence}** command.

  Workaround: Remove the policy-map from the interface and re-configure a new policy-map without this option. (CSCsc97186)

- On a WS-C4948 running Cisco IOS Release 12.2(25)EWA3, you cannot re-set the interface MTU to the default.

  Workaround: Return the value of "Global Ethernet MTU" to the previous default value. (CSCsb81150)

- The following error messages may appear on a Catalyst 4500 series switch after reload, causing it to lose its VLAN configuration and preventing you from recreating them:

  This is observed on a switch whose VTP is in transparent mode, Version 2, after some non-default settings for VLANs 1003 and 1005 (token ring) were learned when the switch was in server mode.

```
%SW_VLAN-4-VTP_INTERNAL_ERROR: VLAN manager received an internal error 14 from vtp
function vtp_download_info: Bad parent VLAN ID-Traceback=...
```

Workarounds:

- Return to VTP version 1.
- Use a 'ring' value in the range for 1 - 1005 for all Token Ring VLANs (CSCsc69560)

- When you configure “logging host X.X.X.X vrf,” on a WS-X4515 chassis that is running Cisco IOS Release 12.2(25)EWA5 or 12.2(25)SG, the chassis does not accept the command line to delete this configuration.

  Workaround: Issue the **erase start** command. (CSCek33573).

- If a physical interface is configured in shutdown mode, then configured with the same configuration including "switchport nonegotiate,” when it is later enabled by the **no shutdown** command, it can not join the bundle and the following error message displays:

  ```
  %EC-5-CANNOT_BUNDLE2: Gi3/16 is not compatible with Po1and will be suspended (trunk
  mode of Gi3/16 is dynamic, Po1 is trunk)
  ```

  The following configuration sequence will prevent interface g3/16 from joining the bundle:

  ```
  int g3/16
  shut
  switchport mode trunk
  switchport nonegotiate
  channel-group 1 mode on

  int po1
  switchport trunk enacp dot1q
  switchport mode trunk
  switchport nonegotiate

  int g3/16
   no shut
  ```

  Workaround: Do NOT configure the channel-port with the same configuration while all physical ports are still in shutdown mode. Instead, issue the **unshutdown** command on the physical ports to carry over the first unshutdown to the channel port. (CSCsd11234)

- When you set up a topology wherein a Catalyst 6000 series switch is connected by multiple links to Port 2, 15-16, 21-47 of a Catalyst 4948 series switch, after 1 minute, the blocking port of Catalyst 4948 starts flapping the STP port status.

  Workaround: Shutdown 2 ports to reduce the number of VLAN instances. (CSCsc29392)

- On a Catalyst 4500 series switch running Cisco IOS Release 12.2(25)EWA2, dhcp snooping does not work on a PVLAN trunk.

  Workaround: None (CSCej06004).

- The first multicast packet is dropped.

  Workaround: None (CSCsc51906).

- The BOOT variable is not cleared with the **no boot system** command.

  Workaround: Check the variable with the **show bootvar** command before issuing the **write memory** command. (CSCeg74620).

- For Cisco IOS Releases preceeding Cisco IOS 12.2(25)EWA6, if the Inline Power circuit of a 4200W power supply fails, the supervisor engine might not switchover to the Active power supply. This will result in a IP phone outage because the Inline power drops to zero. This problem can occur in redundant mode or combined mode.

Workarounds:

- Remove the failed power supply from the bay.
- Upgrade to Cisco IOS Release 12.2(25)EWA6 or releases after Cisco IOS Releases 12.2(31)SG. (CSCse18104)

- If an interface is set to “not autonegotiate” from SNMP, and an snmp get is done to query the state of the interface, the correct state is returned. However, if the interface is set to “not autonegotiate” from the CLI, then an snmp get will show that it is still in autonegotiate mode, even though it isn't.

  Workaround: If the autonegotiate state is set by SNMP through the ifMauAutoNegAdminStatus value, it is reported by SNMP and CLI correctly. (CSCsc21274).

- After an SSO switchover, a Catalyst 4500 series switch running in Cisco IOS Releases 12.2(20)EWA to 12.2(20)EWA3, 12.2(25)EW, and 12.2(25)EWA to 12.2(25)EWA5, the Fantray index is missing the entPhysicalTable of the entity MIB.

  Workaround: None. (CSCei17285).

- When copying files to and from the switch, using ftp, the operation fails for files larger than 18528 bytes when the ftp server is on a remote network.

  A sample operation is:

  ```
  switch# copy running-conf ftp://user:password@n.n.n.n//users/xxx/switch-confg
  ```

  The error is:

  ```
  00:02:06: FTP: 550 /users/xxx/switch-confg: Broken pipe.
  ```

  Workaround: Either use a local ftp server on the same network or use tftp or rcp. (CSCsc48710).

- You might be the continuous error messages like:

  ```
  Dec 19 10:53:36: %C4K_PKTPROCESSING-4-UNKNOWNBRIDGEORROUTE: (Suppressed 52 times)
  Unable to determine whether to route or bridge replicated software-processed pa cket
  with source address 00:04:AC:E4:BC:38 and destination address 00:00:0C:07:AC:23

  Dec 19 11:03:45: %C4K_PKTPROCESSING-4-UNKNOWNBRIDGEORROUTE: (Suppressed 48 times)
  Unable to determine whether to route or bridge replicated software-processed packet
  with source address 00:04:AC:E4:BC:38 and destination address 00:00:0C:07:AC:23

  Dec 19 11:13:52: %C4K_PKTPROCESSING-4-UNKNOWNBRIDGEORROUTE: (Suppressed 37 times)
  Unable to determine whether to route or bridge replicated software-processed pa cket
  with source address 00:04:AC:E4:BC:38 and destination address 00:00:0C:07:AC:23
  ```

  Workaround: None (CSCsc87365).

- On a WS-X4306 on Catalyst WS-C4507R running 12.2(25)SG and 12.2(25)EWA5, after configuring “speed nonegotiate" in interface range, Symbol-Err and Sequence-Err counters increase.

  Workaround: Link up these ports through the **no shutdown** command. (CSCsc71324).

- Symptoms: A router may crash if it receives a packet with a specific crafted IP option as detailed in Cisco Security Advisory: Crafted IP Option Vulnerability:

  http://www.cisco.com/warp/public/707/cisco-sa-20070124-crafted-ip-option.shtml

  Conditions: This DDTS resolves a symptom of CSCec71950. Cisco IOS with this specific DDTS are not at risk of crash if CSCec71950 has been resolved in the software.

  Workaround: Cisco IOS versions with the fix for CSCec71950 are not at risk for this issue and no workaround is required. If CSCec71950 is not resolved, see the following Cisco Security Advisory: Crafted IP Option Vulnerability for workaround information:

http://www.cisco.com/warp/public/707/cisco-sa-20070124-crafted-ip-option.shtml

(CSCek26492)

- The Cisco IOS Transmission Control Protocol (TCP) listener in certain versions of Cisco IOS software is vulnerable to a remotely-exploitable memory leak that may lead to a denial of service condition.

  This vulnerability only applies to traffic destined to the Cisco IOS device. Traffic transiting the Cisco IOS device will not trigger this vulnerability.

  Cisco has made free software available to address this vulnerability for affected customers.

  This issue is documented as Cisco bug ID CSCek37177.

  There are workarounds available to mitigate the effects of the vulnerability.

  This advisory is posted at
  http://www.cisco.com/warp/public/707/cisco-sa-20070124-crafted-tcp.shtml

  (CSCek37177)

- Processing a specially crafted IPv6 Type 0 Routing header can crash a device running Cisco IOS software. This vulnerability does not affect IPv6 Type 2 Routing header which is used in mobile IPv6. IPv6 is not enabled by default in Cisco IOS.

  Cisco has made free software available to address this vulnerability for affected customers.

  There are workarounds available to mitigate the effects of the vulnerability. The workaround depends on if Mobile IPv6 is used and what version on Cisco IOS is being currently used.

  This advisory is posted at
  http://www.cisco.com/warp/public/707/cisco-sa-20070124-IOS-IPv6.shtml

  (CSCsd40334)

- Processing a specially crafted IPv6 Type 0 Routing header can crash a device running Cisco IOS software. This vulnerability does not affect IPv6 Type 2 Routing header which is used in mobile IPv6. IPv6 is not enabled by default in Cisco IOS.

  Cisco has made free software available to address this vulnerability for affected customers.

  There are workarounds available to mitigate the effects of the vulnerability. The workaround depends on if Mobile IPv6 is used and what version on Cisco IOS is being currently used.

  This advisory is posted at
  http://www.cisco.com/warp/public/707/cisco-sa-20070124-IOS-IPv6.shtml

  (CSCsd58381)

Open Caveats in Cisco IOS Release 12.2(25)EWA5

This section lists the open caveats in Cisco IOS Release 12.2(25)EWA5:

- When you enter the **access-list N permit host hostname** command on a redundant chassis operating in SSO mode, you might observe the following syslog messages. The command is not synchronized with the redundant supervisor engine, and keepalive warnings appear.

```
000099: Jul  9 01:22:36.478 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000100: Jul  9 01:22:46.534 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000101: Jul  9 01:22:56.566 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
```

```
000102: Jul  9 01:23:06.598 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000103: Jul  9 01:23:16.642 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000104: Jul  9 01:23:26.682 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000105: Jul  9 01:23:36.721 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000106: Jul  9 01:23:46.777 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000107: Jul  9 01:23:56.793 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
```

Workaround: When using the **access-list N permit host hostname** command, specify the IP address of the host rather than the hostname (CSCef67489)

- After moving to a non-redundant chassis, a supervisor engine previously configured in SSO mode cannot configure router ports or port-channel.

  Workarounds:

  - 1. Before moving the supervisor engine to a non-redundancy-capable chassis, change the mode to RPR.
  - 2. Enter the **write memory** command and reload the switch from the non-redundancy chassis. (CSCef67677)

- After an SSO switchover, you may receive a “PM-4-PORT_INCONSISTENT” error message on the switch console if you enter the **shutdown** command, then the **no shutdown** command on the port that is in UDLD error-disable state. This does not affect the switch; the port remains in UDLD error-disable state. Re-entering the **shutdown** command, and then the **no shutdown** command on the same port ensures that the error message does not re-appear.

  Workaround: None. (CSCeg48586)

- A QoS policing fails if you configure more than 1000 policers on a trunk port and you remove some of the VLANs from the trunk port.

  Workaround: Use less than 1000 policers. (CSCsa57218)

- On a Supervisor Engine V10-GE, when there are lot of flows in the system, an error message is logged to SYSLOG indicating that the netflow hardware table is full. The error message is misleading; the message states "flow table full" instead of "flow collisions."

  Workaround: None. (CSCeh97868)

- Occasionally, when a Catalyst 4500 series switch is in VTP client mode and “switchport trunk prunning vlan none” is configured on the trunk port, the trunk interface fails to send VLAN joins to the VTP server. Some of the VLAN is pruned on the link to the VTP server even when those VLANs are used.

  Workaround: Instead of using the "none" option, provide a specific VLAN when enabling VTP pruning on the trunk interface. (CSCei42957)

- While configuring Smartport macros via HTTP interactively, a Catalyst 4500 series switch might restart unexpectedly.

  Workaround: Provide the entire command sequence in the browser "command" area as if you were entering the commands through the CLI. (CSCei76082)

- If you enter the **default interface** command at the interface level, then at the interface configuration level, any command you enter after a **macro apply** command is not accepted. The Help(?) feature will show only two options: exit and help.

Workaround: Exit, then re-enter interface configuration mode. All commands will be accepted, even after you enter the **macro apply** command. (CSCsc05612)

- When VRF Packet Leaking is configured on a Catalyst 4500 series switch with a Supervisor Engine IV, a packet loss of 50 per cent occurs when you ping a Catalyst 4500 series switch VRF interface IP address from a device in the global table.

  Packets forwarded by Catalyst 4500 series switch are not impacted.

  Workaround: None. (CSCej36831)

- On a Catalyst 4500 series switch running Cisco IOS Release 12.2(18)EW2 or 12.2(18)EW5, instances of the entAliasMappingIdentifier MIB object for some interfaces are missing. This situation can occur randomly on interfaces, regardless of their type, location and status.

  Workaround: None. (CSCsc07093)

- After you initially boot a Catalyst 4500 series switch, if the input interface is in PIM dense mode, "s,g" multicast cast traffic is not forwarded to the intended destination even if that group is represented by a "*,g" on the system.

  Workaround: Issue the **clear ip mroute *** command multiple times. (CSCsb50317)

Resolved Caveats in Cisco IOS Release 12.2(25)EWA5

This section lists the resolved caveats in Cisco IOS Release 12.2(25)EWA5:

- On the WS-4948G (RJ45 and SFP ports), WS-4948G-10GE (RJ45 ports only), WS-X4506-GB-T (RJ45 ports only), and WS-X4013+TS (RJ45 ports only), one or more ports may exhibit complete loss of traffic in both the transmit and receive directions. The problem can be seen on a port when its link flaps (up/down) multiple times in a short period of time.

  This problem impacts all IOS releases starting from Cisco IOS Release 12.2(25)EWA2 or later, including 12.2(25)SG. Entering the **shut** and **no shut** commands will not recover from this problem.

  Please verify the following problem conditions to confirm the occurrence of this problem:

  – Issue the **show interface** *module/port* **status** command; it displays the Connected state

  – Issue the **show platform hardware interface GigabitEthernet** *module/port* **all**; it indicates that the MAC state is "Down" and that the rxInReset flag is set to "True"

  Workaround: Reload the switch. (CSCsc10017)

- A WS-4948G, WS-4948G-10GE, WS-X4506-GB-T, and WS-X4013+TS might display the following message while running the Cisco IOS Release 12.2(20)EWA and later:

  ```
  %C4K_HWPORTMAN-4-BLOCKEDTXQUEUE: Blocked transmit queue HwTxQId1 on Switch Phyport
  18,count=342141
  ```

  Ports with a duplex mis-match and the switch port operating in half duplex will exhibit this problem and no traffic will flow through those ports.

  Such a mis-match can occur when the switch port is configured for auto-negotiation but the far-end device is operating in forced mode. This mis-match can also occur when both ends of the link are operating in forced mode with the same speed but different duplex settings.

  Workarounds:

  – Issue shut /no shut to recover the port. (Prior to Cisco IOS Release 12.2(25)EWA2, a reload may be required.)

  - Repair the duplex mis-match. Ensure that both the switch and the far-end device are both auto-negotiating or forced to operate at same speed and duplex. (CSCsb62330)

- A Catalyst 4500 series switch does not forward an 802.1X request with NULL credentials.

  Workaround: None. (CSCej03858)

- A port enabled for Loop Guard that participates in spanning tree (and is in BLK state) goes into a loop inconsistent state when it stops receiving BPDUs from its neighbor. When the neighbor resumes sending BPDUs (instead of STP BPDUs), STP ordinarily recovers from this state. For this caveat, STP does not recover and the port remains stuck.

  Workarounds:

  - Enter the **shut** and **no shut** commands on the port.
  - Disable Loop Guard on the port and then re-enable it. (CSCsc04047)

- A Catalyst 4500 series switch with Supervisor Engine IV running Cisco IOS Release 12.2(25)EWA3 will send an ARP packet (from an STP blocking port) that can cause a broadcast storm when you either reload a Catalyst 4500 series switch with a blocking port or enter **shut** and **no shut** commands on any port of the switch.

  Workaround: None. (CSCsb84685)

- If UDLD is enabled on a trunk port with native VLAN tagging enabled, the UDLD protocol packets are sent out untagged. This may cause UDLD interoperability issues with other Cisco switches that expect to always see tagged packets on trunk ports.

  Workaround: None. (CSCsb34771)

Open Caveats in Cisco IOS Release 12.2(25)EWA4

This section lists the open caveats in Cisco IOS Release 12.2(25)EWA4:

- When you enter the **access-list N permit host hostname** command on a redundant chassis operating in SSO mode, you might observe the following syslog messages. The command is not synchronized with the redundant supervisor engine, and keepalive warnings appear.

```
000099: Jul  9 01:22:36.478 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000100: Jul  9 01:22:46.534 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000101: Jul  9 01:22:56.566 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000102: Jul  9 01:23:06.598 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000103: Jul  9 01:23:16.642 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000104: Jul  9 01:23:26.682 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000105: Jul  9 01:23:36.721 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000106: Jul  9 01:23:46.777 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000107: Jul  9 01:23:56.793 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
```

  Workaround: When using the **access-list N permit host hostname** command, specify the IP address of the host rather than the hostname (CSCef67489)

- After moving to a non-redundant chassis, a supervisor engine previously configured in SSO mode cannot configure router ports or port-channel.

  Workarounds:

  - 1. Before moving the supervisor engine to a non-redundancy-capable chassis, change the mode to RPR.
  - 2. Enter the **write memory** command and reload the switch from the non-redundancy chassis. (CSCef67677)

- After an SSO switchover, you may receive a "PM-4-PORT_INCONSISTENT" error message on the switch console if you enter the **shutdown** command, then the **no shutdown** command on the port that is in UDLD error-disable state. This does not affect the switch; the port remains in UDLD error-disable state. Re-entering the **shutdown** command, and then the **no shutdown** command on the same port ensures that the error message does not re-appear.

  Workaround: None. (CSCeg48586)

- If you enter the **default interface** command at the interface level, then at the interface configuration level, any command you enter after a **macro apply** command is not accepted. The Help(?) feature shows only two options: exit and help.

  Workaround: Exit, then re-enter interface configuration mode. All commands are accepted, even after you enter the **macro apply** command. (CSCsa44632)

- QoS policing fails if you configure more than 1000 policers on a trunk port and you remove some of the VLANs from the trunk port.

  Workaround: Use less than 1000 policers. (CSCsa57218)

- After you initially boot a Catalyst 4500 series switch, if the input interface is in PIM dense mode, "s,g" multicast cast traffic is not forwarded to the intended destination even if that group is represented by a "*,g" on the system.

  Workaround: Issue the **clear ip mroute *** command multiple times. (CSCsb50317)

- On a Supervisor Engine V10-GE, when there are lot of flows in the system, an error message is logged to SYSLOG indicating that the netflow hardware table is full. The error message is misleading; the message states "flow table full" instead of "flow collisions."

  Workaround: None. (CSCeh97868)

- Occasionally, when a Catalyst 4500 series switch is in VTP client mode and "switchport trunk prunning vlan none" is configured on the trunk port, the trunk interface fails to send VLAN joins to the VTP server. Some of the VLAN is pruned on the link to the VTP server even when those VLANs are used.

  Workaround: Instead of using the "none" option, you must provide a specific VLAN when enabling VTP pruning on the trunk interface. (CSCei42957)

- If UDLD is enabled on a trunk port with native VLAN tagging enabled, the UDLD protocol packets are sent out untagged. This may cause UDLD interoperability issues with other Cisco switches that expect to always see tagged packets on trunk ports.

  Workaround: None. (CSCsb34771)

- While configuring Smartport macros via HTTP interactively, a Catalyst 4500 series switch might restart unexpectedly.

  Workaround: Provide the entire command sequence in the browser "command" area as if you were entering the commands through the CLI. (CSCei76082)

Resolved Caveats in Cisco IOS Release 12.2(25)EWA4

This section lists the resolved caveats in Cisco IOS Release 12.2(25)EWA4:

- Issuing the **no ip flow ingress** command does not turn off the collection of switched IP flows.

  Workaround: Use the **no ip flow ingress** command in conjunction with the **no ip flow ingress layer2-switched** command.

  (CSCsa67042)

- Modifying a policer may not work if you configure more than 800 policers.

  Workaround: Remove, reconfigure and reinstall policers, or, use less than 800 policers. (CSCsa66422)

- The **dot1x default** command does not restore the defaults for the **dot1x max-reauth-req** and **dot1x timeout reauth server** commands.

  Workaround: Restore these default values manually. (CSCeh97513)

- During an SSO switchover, if another device telnets to a Catalyst 4500 series switch while this switch is in global configuration mode, you might observe the following with the **show users** command:

```
4507R# show users
    Line       User       Host(s)              Idle       Location
*  0 con 0                idle                 00:00:00
   1 vty 0                idle                    never  <<<==========
```

  After vty is set to “never,” it cannot be released with the **clear line XX** command.

  Workaround: Reload the system. (CSCei26830)

Note Always exit the global configuration mode *before* a switchover.

- After changing the SNMP engine ID on a Catalyst 4500 series switch running Cisco IOS Release 12.2(25)EWA, none of the existing community strings work. You must re-establish the relationship between any community strings and the new engine ID.

  Upon issuing the **snmp mib community-map** command, you will observe additional SNMP configuration entries that reflect the mismatched SNMP engine ID.

  Workaround: Remove the community-map with the **no snmp mib community-map** command. (CSCei29841)

- With IP multicast routing and IGMP snooping enabled, a Catalyst 4500 series switch does not send ARP requests to a partner switch if the trunk port on the Catalyst 4500 switch is the only interface carrying private VLANs.

  Workaround: Configure any other port on the Catalyst 4500 switch (not necessarily one connected to the partner switch) as a regular trunk interface. Ensure that the interface is “link up” and carries both primary and isolated VLANs. (CSCsb06924)

- After executing a redundancy force-switchover, a Catalyst 4500 series switch loaded with a redundant supervisor engine may reload when you issue a **show snmp group** command.

  Workaround: None. (CSCsb12225)

- If an 802.1X supplicant logs off, the AAA Accounting Stop record displays “port-error” as the Acct-Terminate-Cause[49] reason instead of "user-req.”

  Workaround: None.(CSCsb36480)

- A Catalyst 4500 series switch running the Cisco IOS Release 12.2(25)EWA2 does not send LinkUp traps (IF-MIB).

  Workaround: Issue the **snmp trap link-status permit duplicates** command on the interfaces. (CSCsb38308)

Note Do not use this command with redundant supervisor engines because its behavior at switchover is unpredictable. Moreover, it does not work with the **interface range** command; configure the command on every interface.

- When there are two supervisor engines in a redundant Catalyst 4500 chassis, the active supervisor engine reloads when you configure the following:

```
router bgp 100
bgp upgrade-cli
```

  Workaround: Do not issue the **bgp upgrade-cli** command on a redundant chassis. (CSCsb42734)

- Executing the **show** command in trustpoint-ca configuration mode might cause the switch to fail by corrupting the stack.

  Workaround: Do not issue the **show** command in trust-ca configuration mode. (CSCsb42958)

- When 802.1X accounting is enabled, the Framed-IP-Address[8] attribute is not included in accounting messages generated on ports with IP DHCP snooping trust enabled.

  Workaround: None. (CSCsb46019)

- If storm control is configured and you manually toggle the link (up/down), the ARP table no longer updates its database.

  Workaround: Allow storm control to disable and enable the interface. (CSCsb49409)

- Cisco IOS may permit arbitrary code execution after exploitation of a heap-based buffer overflow vulnerability. Cisco has included additional integrity checks in its software, as further described below, that are intended to reduce the likelihood of arbitrary code execution.

  Cisco has made free software available that includes the additional integrity checks for affected customers.

  This advisory is posted at http://www.cisco.com/warp/public/707/cisco-sa-20051102-timers.shtml. (CSCei61732)

- Symptoms: The VTP feature in certain versions of Cisco IOS software is vulnerable to a locally-exploitable buffer overflow condition and potential execution of arbitrary code. If a VTP summary advertisement is received with a Type-Length-Value (TLV) containing a VLAN name greater than 100 characters, the receiving switch will reset with an Unassigned Exception error.

  Conditions: The packets must be received on a trunk enabled port, with a matching domain name and a matching VTP domain password (if configured).

  Further Information: On the 13th September 2006, Phenoelit Group posted an advisory containing three vulnerabilities:

  – VTP Version field DoS
  – Integer Wrap in VTP revision
  – Buffer Overflow in VTP VLAN name

  These vulnerabilities are addressed by Cisco IDs:

  – CSCsd52629/CSCsd34759—VTP version field DoS

- CSCse40078/CSCse47765—Integer Wrap in VTP revision
- CSCsd34855/CSCei54611—Buffer Overflow in VTP VLAN name

Cisco's statement and further information are available on the Cisco public website at http://www.cisco.com/warp/public/707/cisco-sr-20060913-vtp.shtml

(CSCei54611)

Open Caveats in Cisco IOS Release 12.2(25)EWA3

This section lists the open caveats in Cisco IOS Release 12.2(25)EWA3:

- Changes to console speed are not updated in ROMMON. If a system is reloaded, you will not see a prompt until Cisco IOS software re-starts.

  Workaround: None. (CSCee65294)

- On a system reload, some of the QoS policies that had previously loaded into the hardware may fail to load due to limited space.

  Workaround: Disable QoS with the **no qos** command, and then re-enable QoS with the **qos global** command. (CSCee52449)

- Insertion of unsupported SFPs (small form-factor pluggable optics) into a WS-X4448-GB-SFP or WS-X4448-GB-LX module and can cause undetected communication failures between the supervisor engine and the corresponding module. Subsequent insertion or removal of SFPs from the module is not recognized by the system. This activity can be observed on a Catalyst 4500 series switch using Release 12.1(12c)EW1 or later releases.

  Workaround: Reset the module with the **hw-module module reset** command. (CSCee05078)

- When in SML (Smart Missing Link) mode, some converter boxes (CPE devices) send pulses on the optical side when the Ethernet cable is removed. These converter boxes should also have an LT (Link Test) mode in which the optical side stays active regardless of the connection status and an ML (Missing Link) mode in which the optical side always stays shut down if the Ethernet cable is disconnected. If a WS-X4148-FE-BD-LC port is connected to a converter box in SML mode, and the Ethernet cable on the box is removed, the port will eventually go into errdisable mode because of the continuous connecting and disconnecting (flapping) of the link.

  Workaround: Configure the convertor box (CPE device) to operate in either LT (Link Test) or ML (Missing Link) mode. (CSCed28409)

- When PBR is configured on a Supervisor Engine III or Supervisor Engine IV, hardware-switched PBR packets update the access list or route map statistics improperly.

  Workaround: None. (CSCdz10171)

- A CompactFlash module formatted on either Supervisor Engine III or Supervisor Engine IV that uses Cisco IOS Releases 12.1(14)E, 12.1(19)E, or 12.1(13)EW will not work on Supervisor Engine II-Plus. The CompactFlash module will continue to work on the other supervisor engines.

  Workaround: Format the CompactFlash module on any Catalyst 4500 series switch supervisor engine that uses Release 12.1(19)EW (or later). (CSCeb36355)

- When you enter the **access-list N permit host hostname** command on a redundant chassis operating in SSO mode, you might observe the following syslog messages. The command is not synchronized with the redundant supervisor engine, and keepalive warnings appear.

  ```
  000099: Jul  9 01:22:36.478 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
  config-changed command to standby
  ```

```
000100: Jul  9 01:22:46.534 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000101: Jul  9 01:22:56.566 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000102: Jul  9 01:23:06.598 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000103: Jul  9 01:23:16.642 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
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000104: Jul  9 01:23:26.682 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
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000107: Jul  9 01:23:56.793 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
```

Workaround: When using the **access-list N permit host hostname** command, specify the IP address of the host rather than the hostname (CSCef67489)

- After moving to a non-redundant chassis, a supervisor engine that was previously configured in SSO mode will not be able to configure router ports or port-channel.

  Workarounds:

  1. Before moving the supervisor engine to a non-redundancy-capable chassis, change the mode to RPR.

  2. Enter the **write memory** command and reload the switch from the non-redundancy chassis. (CSCef67677)

- In a hierarchical policer configuration with parent as the aggregate policer and child as the microflow policer, child microflow policer-matched packets report only the packets that are in the profile (they match the policing rate). Packets that exceed the policing rate are not reported in the class-map packet match statistics.

  Workaround: None. (CSCef88634)

- In rare instances, when you are using MAC ACL-based policers, the packet match counters in **show policy-map interface fa6/1** do not show the packets being matched:

```
clearwater#sh policy-map int
  FastEthernet3/2

   Service-policy output: p1

     Class-map: c1 (match-all)
       0 packets<--------It stays at '0' despite of traffic being received
       Match: access-group name fnacl21
       police: Per-interface
         Conform: 9426560 bytes Exceed: 16573440 bytes
```

  Workaround: Verify that the MAC addresses being transmitted through the system are learned.

  (CSCef01798)

- After an SSO switchover, you may receive a "PM-4-PORT_INCONSISTENT" error message on the switch console if you enter the **shutdown** command, then the **no shutdown** command on the port that is in UDLD error-disable state. This does not impact the switch; the port remains in UDLD error-disable state. Re-entering the **shutdown** command, then the **no shutdown** command on the same port will ensure that the error message does not re-appear.

  Workaround: None. (CSCeg48586)

- If you enter the **default interface** command at the interface level, then at the interface configuration level, any command you enter after a **macro apply** command is not accepted. The Help(?) feature will show only two options: exit and help.

  Workaround: Exit, then re-enter interface configuration mode. All commands will be accepted, even after you enter the **macro apply** command. (CSCsa44632)

- Under certain rare scenarios, the packet match counter in **show policy-map interface fa6/1** does not show the packets being matched, as in the following configuration:

```
clearwater#sh policy-map int
 FastEthernet6/2

  Service-policy output: p4

    Class-map: ipc2 (match-all)
      0 packets<---------- It shouldn't stay at '0'.
      Match: access-group name ipacl_2
      police: Per-interface
        Conform: 22937970 bytes Exceed: 977688712 bytes <--- traffic going thru


    Class-map: class-default (match-any)
      410 packets
      Match: any
        410 packets
```

  Workaround: Either enter a shutdown/no shutdown on the port or detach and reapply the service policy. (CSCef30883)

- When changing the access VLAN ID on a sticky port configured with IPSG and voice VLAN, the secure MAC address counter on this port might become negative. This does not impact the system.

  Workaround: Avoid enabling IPSG on sticky ports that are configured with VVID. (CSCeg31712)

- Issuing the **no ip flow ingress** command will not turn off the collection of switched IP flows.

  Workaround: Use the **no ip flow ingress** command in conjunction with the **no ip flow ingress layer2-switched** command.

  (CSCsa67042)

- QoS policing will fail if you configure more than 1000 policers on a trunk port and you remove some of the VLANs from the trunk port.

  Workaround: Use less than 1000 policers.(CSCsa57218)

- Modifying a policer may not work if you configure more than 800 policers.

  Workaround: Remove, reconfigure and reinstall policers, or, use less than 800 policers. (CSCsa66422)

Resolved Caveats in Cisco IOS Release 12.2(25)EWA3

This section lists the resolved caveats in Release 12.2(25)EWA3:

- Through normal software maintenance processes, Cisco is removing deprecated functionality. These changes have no impact on system operation or feature availability. (CSCei76358)
- When a Catalyst 4510 series switch is booted with more than 5 WS-X4148-RJ45V (and possibly other PoE) line cards, the supervisor engine occasionally reloads. With 7 WS-X4148-RJ45V line cards, this occurs about 20 per cent of the time.

Workaround: Because this only occurs around 20 per cent of the time, simply reboot the switch. After the switch boots, this problem will not occur. (CSCsa96753)

Open Caveats in Cisco IOS Release 12.2(25)EWA2

This section lists the open caveats in Cisco IOS Release 12.2(25)EWA2:

- Changes to console speed are not updated in ROMMON. If a system is reloaded, you will not see a prompt until Cisco IOS software re-starts.

  Workaround: None. (CSCee65294)

- On a system reload, some of the QoS policies that had previously loaded into the hardware may fail to load due to limited space.

  Workaround: Disable QoS with the **no qos** command, and then re-enable QoS with the **qos global** command. (CSCee52449)

- Insertion of unsupported SFPs (small form-factor pluggable optics) into a WS-X4448-GB-SFP or WS-X4448-GB-LX module and can cause undetected communication failures between the supervisor engine and the corresponding module. Subsequent insertion or removal of SFPs from the module is not recognized by the system. This activity can be observed on a Catalyst 4500 series switch using Release 12.1(12c)EW1 or later releases.

  Workaround: Reset the module with the **hw-module module reset** command. (CSCee05078)

- When in SML (Smart Missing Link) mode, some converter boxes (CPE devices) send pulses on the optical side when the Ethernet cable is removed. These converter boxes should also have an LT (Link Test) mode in which the optical side stays active regardless of the connection status and an ML (Missing Link) mode in which the optical side always stays shut down if the Ethernet cable is disconnected. If a WS-X4148-FE-BD-LC port is connected to a converter box in SML mode, and the Ethernet cable on the box is removed, the port will eventually go into errdisable mode because of the continuous connecting and disconnecting (flapping) of the link.

  Workaround: Configure the convertor box (CPE device) to operate in either LT (Link Test) or ML (Missing Link) mode. (CSCed28409)

- When PBR is configured on a Supervisor Engine III or Supervisor Engine IV, hardware-switched PBR packets update the access list or route map statistics improperly.

  Workaround: None. (CSCdz10171)

- A CompactFlash module formatted on either Supervisor Engine III or Supervisor Engine IV that uses Cisco IOS Releases 12.1(14)E, 12.1(19)E, or 12.1(13)EW will not work on Supervisor Engine II-Plus. The CompactFlash module will continue to work on the other supervisor engines.

  Workaround: Format the CompactFlash module on any Catalyst 4500 series switch supervisor engine that uses Release 12.1(19)EW (or later). (CSCeb36355)

- When you enter the **access-list N permit host hostname** command on a redundant chassis operating in SSO mode, you might observe the following syslog messages. The command is not synchronized with the redundant supervisor engine, and keepalive warnings appear.

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```

Workaround: When using the **access-list N permit host hostname** command, specify the IP address of the host rather than the hostname (CSCef67489)

- After moving to a non-redundant chassis, a supervisor engine that was previously configured in SSO mode will not be able to configure router ports or port-channel.

  Workarounds:

  1. Before moving the supervisor engine to a non-redundancy-capable chassis, change the mode to RPR.

  2. Enter the **write memory** command and reload the switch from the non-redundancy chassis. (CSCef67677)

- In a hierarchical policer configuration with parent as the aggregate policer and child as the microflow policer, child microflow policer-matched packets report only the packets that are in the profile (they match the policing rate). Packets that exceed the policing rate are not reported in the class-map packet match statistics.

  Workaround: None. (CSCef88634)

- In rare instances, when you are using MAC ACL-based policers, the packet match counters in **show policy-map interface fa6/1** do not show the packets being matched:

```
clearwater#sh policy-map int
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   Service-policy output: p1

     Class-map: c1 (match-all)
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       Match: access-group name fnacl21
       police: Per-interface
         Conform: 9426560 bytes Exceed: 16573440 bytes
```

  Workaround: Verify that the MAC addresses being transmitted through the system are learned.

  (CSCef01798)

- After an SSO switchover, you may receive a "PM-4-PORT_INCONSISTENT" error message on the switch console if you enter the **shutdown** command, then the **no shutdown** command on the port that is in UDLD error-disable state. This does not impact the switch; the port remains in UDLD error-disable state. Re-entering the **shutdown** command, then the **no shutdown** command on the same port will ensure that the error message does not re-appear.

  Workaround: None. (CSCeg48586)

- If you enter the **default interface** command at the interface level, then at the interface configuration level, any command you enter after a **macro apply** command is not accepted. The Help(?) feature will show only two options: exit and help.

  Workaround: Exit, then re-enter interface configuration mode. All commands will be accepted, even after you enter the **macro apply** command. (CSCsa44632)

- Under certain rare scenarios, the packet match counter in **show policy-map interface fa6/1** does not show the packets being matched, as in the following configuration:

```
clearwater#sh policy-map int
 FastEthernet6/2

  Service-policy output: p4

    Class-map: ipc2 (match-all)
      0 packets<---------- It shouldn't stay at '0'.
      Match: access-group name ipacl_2
      police: Per-interface
        Conform: 22937970 bytes Exceed: 977688712 bytes <--- traffic going thru


    Class-map: class-default (match-any)
      410 packets
      Match: any
        410 packets
```

  Workaround: Either enter a shutdown/no shutdown on the port or detach and reapply the service policy. (CSCef30883)

- When changing the access VLAN ID on a sticky port configured with IPSG and voice VLAN, the secure MAC address counter on this port might become negative. This does not impact the system.

  Workaround: Avoid enabling IPSG on sticky ports that are configured with VVID. (CSCeg31712)

- Issuing the **no ip flow ingress** command will not turn off the collection of switched IP flows.

  Workaround: Use the **no ip flow ingress** command in conjunction with the **no ip flow ingress layer2-switched** command.

  (CSCsa67042)

- QoS policing will fail if you configure more than 1000 policers on a trunk port and you remove some of the VLANs from the trunk port.

  Workaround: Use less than 1000 policers.(CSCsa57218)

- Modifying a policer may not work if you configure more than 800 policers.

  Workaround: Remove, reconfigure and reinstall policers, or, use less than 800 policers. (CSCsa66422)

Resolved Caveats in Cisco IOS Release 12.2(25)EWA2

This section lists the resolved caveats in Release 12.2(25)EWA2:

- If the switch receives an unlearned source MAC address after a security violation, memory is consumed in creating a security violation-related SNMP trap for each source MAC address. If the switch receives several unlearned source MAC addresses at a very high rate, considerable memory is consumed to ensure that the SNMP traps are generated and sent out correctly.

  Workaround: Configure the trap-rate to limit very small number of traps every second. The following configuration sets a trap-rate of 1/2 trap per second (CSCeg41478):

```
Switch(config)#snmp-ser enable traps port-se trap-rate 1
Switch(config)#snmp-ser enable traps port-se trap-rate 2
```

- If you configure a SPAN session and then apply a SPAN ACL filter to the session, the packets that should be dropped according to the ACL definition are still sent out the SPAN destination port.

For example, the intent of the following command sequence is to drop packets with source or destination IP address 20.4.1.2 on the SPAN destination port Gigabit Ethernet 6/5:

```
Switch(config)# access-list 1 deny 20.4.1.2
Switch(config)# monitor session 1 source interface gi6/5
Switch(config)# monitor session 1 destination interface gi6/7
Switch(config)# monitor session 1 filter ip access-group 1
```

However, if this is the first time you are applying the ACL filter to the SPAN session, the packets with IP address 20.4.1.2 are still copied to the SPAN destination port.

If this sample configuration is contained in the startup-config, then the ACL filter would work properly after the Catalyst 4500 series switch boots.

This caveat only impacts Cisco IOS Release 12.2(25)EWA.

Workaround: Remove the ACL filter and then re-apply it using the following command sequence:

```
Switch(config)# no monitor session 1 filter ip access-group 1
Switch(config)# monitor session 1 filter ip access-group 1
```

(CSCsa64231)

- Issuing the **no ip flow ingress** command will not turn off the collection of switched IP flows.

  Workaround: Use the **no ip flow ingress** command in conjunction with the **no ip flow ingress layer2-switched** command.

  (CSCsa67042)

- When you use the **vlan** command in interface range configuration mode to configure a range of VLANs on Layer 3 ports, the VLANs might not be created, as in the following example. Additional VLANs will not be created on the Catalyst 4500 series switch until the switch has been reloaded.

  ```
  Switch(config)# int range gi3/3 - 28
  Switch(config-if-range)# sw
  Switch(config-if-range)# no sw
  Switch(config-if-range)# vlan 1000-4094
  % Command failed on interface GigabitEthernet3/4. Aborting
  Switch(config)#
  ```

  Workaround: Create the VLANs in global or interface command mode. CSCsa54831)

- Deleting the trusted boundary configuration from a port that does not have a phone attached to it and which was configured using the **auto qos voip cisco** command leaves the port in an untrusted state. The **auto qos voip cisco** command will configure two CLI's on a port: **qos trust cos** and **qos trust device cisco-phone**. Removing the **qos trust device cisco-phone** command (using the **no qos trust cisco-phone** command) will cause the port to remain in an untrusted state.

  Workaround: None.(CSCsa64726)

- Under load conditions, the CPU utilization reported on a Catalyst 4500 series switch running Cisco IOS Release 12.2(25)EWA2 is approximately 5 per cent higher than that reported on previous releases of IOS.

  Workaround: In previous releases of Cisco IOS, CPU utilization was computed incorrectly. This defect has been fixed in Cisco IOS Release 12.2(25)EWA2 resulting in slightly higher CPU utilization being reported under similar load conditions as compared to previous releases. (CSCsb19391)

  This is not a problem and a workaround is unnecessary.

- When the active supervisor engine on a Catalyst 4500 series switch redundant chassis is running Release 12.1-based IOS and the standby supervisor engine is running 12.2-based IOS, the following IPC error is seen, and the active supervisor engine is reset by the standby supervisor engine:

```
00:00:36: %C4K_REDUNDANCY-4-KEEPALIVE_WARNING: Keepalive messages from peer Supervisor
are missing for 27 seconds
00:00:38: %CHKPT-3-IPCSESSION: Unable to open an IPC session for communicating with
(STANDBY). rc= 12
00:01:03: %C4K_REDUNDANCY-4-KEEPALIVE_WARNING: Keepalive messages from peer Supervisor
are missing for 54 seconds
00:01:30: %C4K_REDUNDANCY-4-KEEPALIVE_WARNING: Keepalive messages from peer Supervisor
are missing for 81 seconds
00:05:42: %C4K_REDUNDANCY-3-PEER_RELOAD: The peer Supervisor is being reset because
keepalive message(s) not received.
00:05:42: %C4K_REDUNDANCY-6-SWITCHOVER: Switchover activity detected, changing role
from STANDBY to ACTIVE
```

  Workaround: This is not a supported configuration. Ensure that both supervisor engines are running the same IOS release. (CSCsb21892)

- A QoS service-policy cannot be attached to a port or VLAN if routing is not configured on the system.

  Workaround: Enable IP routing on the system, but do not configure any SVIs and or physical routed ports. The routing operation is performed only when a SVI and or physical routed port is configured with a valid IP address. (CSCsa54215)

- When you configure numerous per-port per-VLAN QoS (like 800 input policers), and then modify them, per-port per-VLAN QoS will stop working.

  Workaround: Disable and or re-enable QoS. (CSCsa66422)

- Occasionally, when IPX ACL is configured with a tunnel interface to carry IPX traffic, the Catalyst 4500 series switch reloads once you delete the interface.

  This caveat does not occur in earlier releases.

  Workaround: None. (CSCsa68817)

- Let's assume that you configure the WS-X4548-GB-RJ45V linecard with the **interface range** command, as follows:

```
power inline static max 15400
no switchport
```

  You might receive the following error message-related trace back for any of the configured interfaces within the range:

```
1d02h: %INTERFACE_API-3-NOADDSUBBLOCK: The SWIDB subblock named UDLD was not added to
GigabitEthernet#/#
-Traceback= 1022E35C 10291A1C 1055FE5C 103E3890 103E3924 1038D228 103EF2C8 103EF758
1043D910 101E1B90 103BA750 101E0DA4 101E0858 101FA910 1030F04C 103059E8
```

  Workarounds: To avoid the error message, do either of the following:

  1. Enter the configuration as soon as the WS-X4548-GB-RJ45V linecard is inserted into the chassis rather than wait for a timeout period.

  2. Use interface configuration instead of interface range configuration. (CSCsb24491)

- When a redundant Catalyst 4500 chassis operating in SSO mode is configured for dot1q trunk and performs a switchover, IP traffic might not be able to travel from the Layer 3 interface on the new active supervisor engine to the Layer 3 interface on an interconnected WS-4014.

  Workaround: Clear the arp cache on both supervisor engines. (CSCsb24611)

- Moving a GBIC from one port (uplink or non-uplink) to another may cause a traceback. This problem can occur on any supervisor engine in any Catalyst 4500 chassis.

  Workaround: Ensure that the port is administratively shutdown before you remove the GBIC. (CSCsa66349)

Open Caveats in Cisco IOS Release 12.2(25)EWA1

This section lists the open caveats in Cisco IOS Release 12.2(25)EWA1:

- Changes to console speed are not updated in ROMMON. If a system is reloaded, you will not see a prompt until Cisco IOS software re-starts.

  Workaround: None. (CSCee65294)

- On a system reload, some of the QoS policies that had previously loaded into the hardware may fail to load due to limited space.

  Workaround: Disable QoS with the **no qos** command, and then re-enable QoS with the **qos global** command. (CSCee52449)

- Insertion of unsupported SFPs (small form-factor pluggable optics) into a WS-X4448-GB-SFP or WS-X4448-GB-LX module and can cause undetected communication failures between the supervisor engine and the corresponding module. Subsequent insertion or removal of SFPs from the module is not recognized by the system. This activity can be observed on a Catalyst 4500 series switch using Release 12.1(12c)EW1 or later releases.

  Workaround: Reset the module with the **hw-module module reset** command. (CSCee05078)

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  Workaround: Configure the convertor box (CPE device) to operate in either LT (Link Test) or ML (Missing Link) mode. (CSCed28409)

- When PBR is configured on a Supervisor Engine III or Supervisor Engine IV, hardware-switched PBR packets update the access list or route map statistics improperly.

  Workaround: None. (CSCdz10171)

- A CompactFlash module formatted on either Supervisor Engine III or Supervisor Engine IV that uses Cisco IOS Releases 12.1(14)E, 12.1(19)E, or 12.1(13)EW will not work on Supervisor Engine II-Plus. The CompactFlash module will continue to work on the other supervisor engines.

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- When you enter the **access-list N permit host hostname** command on a redundant chassis operating in SSO mode, you might observe the following syslog messages. The command is not synchronized with the redundant supervisor engine, and keepalive warnings appear.

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000106: Jul  9 01:23:46.777 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000107: Jul  9 01:23:56.793 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
```

Workaround: When using the **access-list N permit host hostname** command, specify the IP address of the host rather than the hostname (CSCef67489)

- After a supervisor engine switchover in SSO mode, the Diagnostic Optical Monitoring feature (CLI and MIB support) might not work as expected. The **show interfaces transceiver** command will not display any output.

  Workaround: Reload the supervisor engines. (CSCef67309)

- After moving to a non-redundant chassis, a supervisor engine that was previously configured in SSO mode will not be able to configure router ports or port-channel.

  Workarounds:

  1. Before moving the supervisor engine to a non-redundancy-capable chassis, change the mode to RPR.

  2. Enter the **write memory** command and reload the switch from the non-redundancy chassis. (CSCef67677)

- In a hierarchical policer configuration with parent as the aggregate policer and child as the microflow policer, child microflow policer-matched packets report only the packets that are in the profile (they match the policing rate). Packets that exceed the policing rate are not reported in the class-map packet match statistics.

  Workaround: None. (CSCef88634)

- In rare instances, when you are using MAC ACL-based policers, the packet match counters in **show policy-map interface fa6/1** do not show the packets being matched:

```
clearwater#sh policy-map int
  FastEthernet3/2

   Service-policy output: p1

     Class-map: c1 (match-all)
       0 packets<--------It stays at '0' despite of traffic being received
       Match: access-group name fnacl21
       police: Per-interface
         Conform: 9426560 bytes Exceed: 16573440 bytes
```

Workaround: Verify that the MAC addresses being transmitted through the system are learned.

(CSCef01798)

- After an SSO switchover, you may receive a "PM-4-PORT_INCONSISTENT" error message on the switch console if you enter the **shutdown** command, then the **no shutdown** command on the port that is in UDLD error-disable state. This does not impact the switch; the port remains in UDLD error-disable state. Re-entering the **shutdown** command, then the **no shutdown** command on the same port will ensure that the error message does not re-appear.

  Workaround: None. (CSCeg48586)

- If you enter the **default interface** command at the interface level, then at the interface configuration level, any command you enter after a **macro apply** command is not accepted. The Help(?) feature will show only two options: exit and help.

  Workaround: Exit, then re-enter interface configuration mode. All commands will be accepted, even after you enter the **macro apply** command. (CSCsa44632)

- If the switch receives an unlearned source MAC address after a security violation, memory is consumed in creating a security violation-related SNMP trap for each source MAC address. If the switch receives several unlearned source MAC addresses at a very high rate, considerable memory is consumed to ensure that the SNMP traps are generated and sent out correctly.

  Workaround: Configure the trap-rate to limit very small number of traps every second. The following configuration sets a trap-rate of 1/2 trap per second (CSCeg41478):

```
Switch(config)#snmp-ser enable traps port-se trap-rate 1
Switch(config)#snmp-ser enable traps port-se trap-rate 2
```

- Under certain rare scenarios, the packet match counter in **show policy-map interface fa6/1** does not show the packets being matched, as in the following configuration:

```
clearwater#sh policy-map int
 FastEthernet6/2

  Service-policy output: p4

    Class-map: ipc2 (match-all)
      0 packets<---------- It shouldn't stay at '0'.
      Match: access-group name ipacl_2
      police: Per-interface
        Conform: 22937970 bytes Exceed: 977688712 bytes <--- traffic going thru


    Class-map: class-default (match-any)
      410 packets
      Match: any
        410 packets
```

  Workaround: Either enter a shutdown/no shutdown on the port or detach and reapply the service policy. (CSCef30883)

- When a switchport configured with port security is converted from an access to a promiscuous port, the port security configuration is lost. The **show interface** command will show that port security is no longer configured.

  Workaround: After converting a switchport with port security to a promiscuous port, apply the port security interface command again. (CSCeg41424)

- When changing the access VLAN ID on a sticky port configured with IPSG and voice VLAN, the secure MAC address counter on this port might become negative. This does not impact the system.

  Workaround: Avoid enabling IPSG on sticky ports that are configured with VVID. (CSCeg31712)

- If you configure a SPAN session and then apply a SPAN ACL filter to the session, the packets that should be dropped according to the ACL definition are still sent out the SPAN destination port.

For example, the intent of the following command sequence is to drop packets with source or destination IP address 20.4.1.2 on the SPAN destination port Gigabit Ethernet 6/5:

```
Switch(config)# access-list 1 deny 20.4.1.2
Switch(config)# monitor session 1 source interface gi6/5
Switch(config)# monitor session 1 destination interface gi6/7
Switch(config)# monitor session 1 filter ip access-group 1
```

However, if this is the first time you are applying the ACL filter to the SPAN session, the packets with IP address 20.4.1.2 are still copied to the SPAN destination port.

If this sample configuration is contained in the startup-config, then the ACL filter would work properly after the Catalyst 4500 series switch boots.

This caveat only impacts Cisco IOS Release 12.2(25)EWA.

Workaround: Remove the ACL filter and then re-apply it using the following command sequence:

```
Switch(config)# no monitor session 1 filter ip access-group 1
Switch(config)# monitor session 1 filter ip access-group 1
```

(CSCsa64231)

- Issuing the **no ip flow ingress** command will not turn off the collection of switched IP flows.

  Workaround: Use the **no ip flow ingress** command in conjunction with the **no ip flow ingress layer2-switched** command.

  (CSCsa67042)

- QoS policing will fail if you configure more than 1000 policers on a trunk port and you remove some of the VLANs from the trunk port.

  Workaround: Use less than 1000 policers. (CSCsa57218)

- Modifying a policer may not work if you configure more than 800 policers.

  Workaround: Remove, reconfigure and reinstall policers, or, use less than 800 policers. (CSCsa66422)

- When you use the **vlan** command in interface range configuration mode to configure a range of VLANs on Layer 3 ports, the VLANs might not be created, as in the following example. Additional VLANs will not be created on the Catalyst 4500 series switch until the switch has been reloaded.

  ```
  Switch(config)# int range gi3/3 - 28
  Switch(config-if-range)# sw
  Switch(config-if-range)# no sw
  Switch(config-if-range)# vlan 1000-4094
  % Command failed on interface GigabitEthernet3/4. Aborting
  Switch(config)#
  ```

  Workaround: Create the VLANs in global or interface command mode. CSCsa54831)

- Deleting the trusted boundary configuration from a port that does not have a phone attached to it and which was configured using the **auto qos voip cisco** command leaves the port in an untrusted state. The **auto qos voip cisco** command will configure two CLI's on a port: **qos trust cos** and **qos trust device cisco-phone**. Removing the **qos trust device cisco-phone** command (using the **no qos trust cisco-phone** command) will cause the port to remain in an untrusted state.

  Workaround: None. (CSCsa64726)

Resolved Caveats in Cisco IOS Release 12.2(25)EWA1

This section lists the resolved caveats in Release 12.2(25)EWA1:

- NetFlow Feature Acceleration has been deprecated and removed from Cisco IOS. The global command **ip flow-cache feature-accelerate** will no longer be recognized in any IOS configuration.

  If your router configuration does not currently contain the command **ip flow-cache feature-accelerate**, this change does not affect you.

  The removal of NetFlow Feature Acceleration does not affect any other aspects of Netflow operation, for example Access-list processing. The features are separate and distinct.

  Cisco Express Forwarding (CEF) supercedes the deprecated NetFlow Feature Acceleration.

  Additionally, the following MIB objects and OIDs have been deprecated and removed from the netflow mib (CISCO-NETFLOW-MIB):

```
cnfFeatureAcceleration        1.3.6.1.4.1.9.9.99999.1.3
cnfFeatureAccelerationEnable  1.3.6.1.4.1.9.9.99999.1.3.1
cnfFeatureAvailableSlot       1.3.6.1.4.1.9.9.99999.1.3.2
cnfFeatureActiveSlot          1.3.6.1.4.1.9.9.99999.1.3.3
cnfFeatureTable               1.3.6.1.4.1.9.9.99999.1.3.4
cnfFeatureEntry               1.3.6.1.4.1.9.9.99999.1.3.4.1
cnfFeatureType                1.3.6.1.4.1.9.9.99999.1.3.4.1.1
cnfFeatureSlot                1.3.6.1.4.1.9.9.99999.1.3.4.1.2
cnfFeatureActive              1.3.6.1.4.1.9.9.99999.1.3.4.1.3
cnfFeatureAttaches            1.3.6.1.4.1.9.9.99999.1.3.4.1.4
cnfFeatureDetaches            1.3.6.1.4.1.9.9.99999.1.3.4.1.5
cnfFeatureConfigChanges       1.3.6.1.4.1.9.9.99999.1.3.4.1.6
```

  (CSCsa81379)

- Cisco Internetwork Operating System (IOS®) Software is vulnerable to a Denial of Service (DoS) and potentially an arbitrary code execution attack from a specifically crafted IPv6 packet. The packet must be sent from a local network segment. Only devices that have been explicitly configured to process IPv6 traffic are affected. Upon successful exploitation, the device may reload or be open to further exploitation.

  Cisco has made free software available to address this vulnerability for all affected customers.

  More details can be found in the security advisory that is posted at http://www.cisco.com/warp/public/707/cisco-sa-20050729-ipv6.shtml. (CSCef68324)

Open Caveats in Cisco IOS Release 12.2(25)EWA

This section lists the open caveats in Cisco IOS Release 12.2(25)EWA:

- Changes to console speed are not updated in ROMMON. If a system is reloaded, you will not see a prompt until Cisco IOS software re-starts.

  Workaround: None. (CSCee65294)

- On a system reload, some of the QoS policies that had previously loaded into the hardware may fail to load due to limited space.

  Workaround: Disable QoS with the **no qos** command, and then re-enable QoS with the **qos global** command. (CSCee52449)

- Insertion of unsupported SFPs (small form-factor pluggable optics) into a WS-X4448-GB-SFP or WS-X4448-GB-LX module and can cause undetected communication failures between the supervisor engine and the corresponding module. Subsequent insertion or removal of SFPs from the module is not recognized by the system. This activity can be observed on a Catalyst 4500 series switch using Release 12.1(12c)EW1 or later releases.

  Workaround: Reset the module with the **hw-module module reset** command. (CSCee05078)

- When in SML (Smart Missing Link) mode, some converter boxes (CPE devices) send pulses on the optical side when the Ethernet cable is removed. These converter boxes should also have an LT (Link Test) mode in which the optical side stays active regardless of the connection status and an ML (Missing Link) mode in which the optical side always stays shut down if the Ethernet cable is disconnected. If a WS-X4148-FE-BD-LC port is connected to a converter box in SML mode, and the Ethernet cable on the box is removed, the port will eventually go into errdisable mode because of the continuous connecting and disconnecting (flapping) of the link.

  Workaround: Configure the convertor box (CPE device) to operate in either LT (Link Test) or ML (Missing Link) mode. (CSCed28409)

- When PBR is configured on a Supervisor Engine III or Supervisor Engine IV, hardware-switched PBR packets update the access list or route map statistics improperly.

  Workaround: None. (CSCdz10171)

- A CompactFlash module formatted on either Supervisor Engine III or Supervisor Engine IV that uses Cisco IOS Releases 12.1(14)E, 12.1(19)E, or 12.1(13)EW will not work on Supervisor Engine II-Plus. The CompactFlash module will continue to work on the other supervisor engines.

  Workaround: Format the CompactFlash module on any Catalyst 4500 series switch supervisor engine that uses Release 12.1(19)EW (or later). (CSCeb36355)

- When you enter the **access-list N permit host hostname** command on a redundant chassis operating in SSO mode, you might observe the following syslog messages. The command is not synchronized with the redundant supervisor engine, and keepalive warnings appear.

```
000099: Jul  9 01:22:36.478 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000100: Jul  9 01:22:46.534 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000101: Jul  9 01:22:56.566 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000102: Jul  9 01:23:06.598 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000103: Jul  9 01:23:16.642 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000104: Jul  9 01:23:26.682 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000105: Jul  9 01:23:36.721 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000106: Jul  9 01:23:46.777 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000107: Jul  9 01:23:56.793 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
```

  Workaround: When using the **access-list N permit host hostname** command, specify the IP address of the host rather than the hostname (CSCef67489)

- After a supervisor engine switchover in SSO mode, the Diagnostic Optical Monitoring feature (CLI and MIB support) might not work as expected. The **show interfaces transceiver** command will not display any output.

  Workaround: Reload the supervisor engines. (CSCef67309)

- After moving to a non-redundant chassis, a supervisor engine that was previously configured in SSO mode will not be able to configure router ports or port-channel.

  Workarounds:

  1. Before moving the supervisor engine to a non-redundancy-capable chassis, change the mode to RPR.

  2. Enter the **write memory** command and reload the switch from the non-redundancy chassis. (CSCef67677)

- In a hierarchical policer configuration with parent as the aggregate policer and child as the microflow policer, child microflow policer-matched packets report only the packets that are in the profile (they match the policing rate). Packets that exceed the policing rate are not reported in the class-map packet match statistics.

  Workaround: None. (CSCef88634)

- In rare instances, when you are using MAC ACL-based policers, the packet match counters in **show policy-map interface fa6/1** do not show the packets being matched:

```
clearwater#sh policy-map int
  FastEthernet3/2

   Service-policy output: p1

     Class-map: c1 (match-all)
       0 packets<--------It stays at '0' despite of traffic being received
       Match: access-group name fnacl21
       police: Per-interface
         Conform: 9426560 bytes Exceed: 16573440 bytes
```

  Workaround: Verify that the MAC addresses being transmitted through the system are learned.

  (CSCef01798)

- After an SSO switchover, you may receive a "PM-4-PORT_INCONSISTENT" error message on the switch console if you enter the **shutdown** command, then the **no shutdown** command on the port that is in UDLD error-disable state. This does not impact the switch; the port remains in UDLD error-disable state. Re-entering the **shutdown** command, then the **no shutdown** command on the same port will ensure that the error message does not re-appear.

  Workaround: None. (CSCeg48586)

- If you enter the **default interface** command at the interface level, then at the interface configuration level, any command you enter after a **macro apply** command is not accepted. The Help(?) feature will show only two options: exit and help.

  Workaround: Exit, then re-enter interface configuration mode. All commands will be accepted, even after you enter the **macro apply** command. (CSCsa44632)

- If the switch receives an unlearned source MAC address after a security violation, memory is consumed in creating a security violation-related SNMP trap for each source MAC address. If the switch receives several unlearned source MAC addresses at a very high rate, considerable memory is consumed to ensure that the SNMP traps are generated and sent out correctly.

  Workaround: Configure the trap-rate to limit very small number of traps every second. The following configuration sets a trap-rate of 1/2 trap per second (CSCeg41478):

```
Switch(config)#snmp-ser enable traps port-se trap-rate 1
Switch(config)#snmp-ser enable traps port-se trap-rate 2
```

- Under certain rare scenarios, the packet match counter in **show policy-map interface fa6/1** does not show the packets being matched, as in the following configuration:

```
clearwater#sh policy-map int
 FastEthernet6/2

  Service-policy output: p4

    Class-map: ipc2 (match-all)
      0 packets<---------- It shouldn't stay at '0'.
      Match: access-group name ipacl_2
      police: Per-interface
        Conform: 22937970 bytes Exceed: 977688712 bytes <--- traffic going thru


    Class-map: class-default (match-any)
      410 packets
      Match: any
        410 packets
```

  Workaround: Either enter a shutdown/no shutdown on the port or detach and reapply the service policy. (CSCef30883)

- When a switchport configured with port security is converted from an access to a promiscuous port, the port security configuration is lost. The **show interface** command will show that port security is no longer configured.

  Workaround: After converting a switchport with port security to a promiscuous port, apply the port security interface command again. (CSCeg41424)

- When changing the access VLAN ID on a sticky port configured with IPSG and voice VLAN, the secure MAC address counter on this port might become negative. This does not impact the system.

  Workaround: Avoid enabling IPSG on sticky ports that are configured with VVID. (CSCeg31712)

- If you configure a SPAN session and then apply a SPAN ACL filter to the session, the packets that should be dropped according to the ACL definition are still sent out the SPAN destination port.

  For example, the intent of the following command sequence is to drop packets with source or destination IP address 20.4.1.2 on the SPAN destination port Gigabit Ethernet 6/5:

```
Switch(config)# access-list 1 deny 20.4.1.2
Switch(config)# monitor session 1 source interface gi6/5
Switch(config)# monitor session 1 destination interface gi6/7
Switch(config)# monitor session 1 filter ip access-group 1
```

  However, if this is the first time you are applying the ACL filter to the SPAN session, the packets with IP address 20.4.1.2 are still copied to the SPAN destination port.

  If this sample configuration is contained in the startup-config, then the ACL filter would work properly after the Catalyst 4500 series switch boots.

  This caveat only impacts Cisco IOS Release 12.2(25)EWA.

  Workaround: Remove the ACL filter and then re-apply it using the following command sequence:

```
Switch(config)# no monitor session 1 filter ip access-group 1
Switch(config)# monitor session 1 filter ip access-group 1
```

  (CSCsa64231)

- Issuing the **no ip flow ingress** command will not turn off the collection of switched IP flows.

  Workaround: Use the **no ip flow ingress** command in conjunction with the **no ip flow ingress layer2-switched** command.

  (CSCsa67042)

- QoS policing will fail if you configure more than 1000 policers on a trunk port and you remove some of the VLANs from the trunk port.

  Workaround: Use less than 1000 policers. (CSCsa57218)

- Modifying a policer may not work if you configure more than 800 policers.

  Workaround: Remove, reconfigure and reinstall policers, or, use less than 800 policers. (CSCsa66422)

- When you use the **vlan** command in interface range configuration mode to configure a range of VLANs on Layer 3 ports, the VLANs might not be created, as in the following example. Additional VLANs will not be created on the Catalyst 4500 series switch until the switch has been reloaded.

```
Switch(config)# int range gi3/3 - 28
Switch(config-if-range)# sw
Switch(config-if-range)# no sw
Switch(config-if-range)# vlan 1000-4094
% Command failed on interface GigabitEthernet3/4. Aborting
Switch(config)#
```

  Workaround: Create the VLANs in global or interface command mode. CSCsa54831)

- Deleting the trusted boundary configuration from a port that does not have a phone attached to it and which was configured using the **auto qos voip cisco** command leaves the port in an untrusted state. The **auto qos voip cisco** command will configure two CLI's on a port: **qos trust cos** and **qos trust device cisco-phone**. Removing the **qos trust device cisco-phone** command (using the **no qos trust cisco-phone** command) will cause the port to remain in an untrusted state.

  Workaround: None. (CSCsa64726)

- The policers configured on VLANs associated with the trunk ports of a Catalyst 4500 series switch may stop functioning when more than 1000 VLANs have policers applied to them and VLANs are added or deleted from the policer list. For example, if a trunk port allows 1020 VLANs with a policer applied to all VLANs, removing and adding some VLANs from the VLAN list may stop the policers from functioning on any of the VLANs.

  Workaround: If you configure more than 1000 VLANs with policers, remove the excess VLAN policers, disable, and enable QoS globally to restore QoS. For a VLAN list of roughly 1000 VLANs, disable, then enable QoS globally to restore QoS after the VLAN changes are made. (CSCsa57218)

Resolved Caveats in Cisco IOS Release 12.2(25)EWA

This section lists the resolved caveats in Release 12.2(25)EWA:

- A spurious error message appears when an SSH connection disconnects after an idle timeout.

  Workaround: Disable idle timeouts. (CSCec30214)

- When the access VLAN of an access port is converted into an RSPAN VLAN, the **show interface** and **show interface inactive** commands indicate that the interface is up and connected. This problem is strictly cosmetic; the interface is no longer forwarding traffic.

  Workaround: None. (CSCsa44090)

- When a Catalyst 4500 series switch exhausts the packet buffers and can no longer receive packets, the Rx-No_pkt_Buff field in the output of the **show platform interface all** command may not get updated.

  Workaround: None. (CSCef72691)

- Per-flow Border Gateway Protocol (BGP) AS information is not collected. As a result, BGP AS information will not be available in any of the aggregation caches.

  Workaround: None. (CSCin85662)

- Multicast over Generic Routing Encapsulation (GRE) does not work.

  Workaround: None (CSCin85525)

- The PoE status LED on the WS-X4506-GB-T linecard is always off. Moreover, PoE status does not appear in the output of the show environment command.

  Workaround: None. (CSCeh26976)

Open Caveats in Cisco IOS Release 12.2(25)EW

This section lists the open caveats in Cisco IOS Release 12.2(25)EW.

- Changes to console speed are not updated in ROMMON. If a system is reloaded, you will not see a prompt until Cisco IOS software re-starts.

  Workaround: None. (CSCee65294)

- On a system reload, some of the QoS policies that had previously loaded into the hardware may fail to load due to limited space.

  Workaround: Disable QoS with the **no qos** command, and then reenable QoS with the **qos global** command. (CSCee52449)

- Insertion of unsupported SFPs (small form-factor pluggable optics) into a WS-X4448-GB-SFP or WS-X4448-GB-LX module and can cause undetected communication failures between the supervisor engine and the corresponding module. Subsequent insertion or removal of SFPs from the module is not recognized by the system. This behavior can be observed on a Catalyst 4500 series switch using Release 12.1(12c)EW1 or later releases.

  Workaround: Reset the module with the **hw-module module reset** command. (CSCee05078)

- When in SML (Smart Missing Link) mode, some converter boxes (CPE devices) send pulses on the optical side when the Ethernet cable is removed. These converter boxes should also have an LT (Link Test) mode in which the optical side stays active regardless of the connection status and an ML (Missing Link) mode in which the optical side always stays shut down if the Ethernet cable is disconnected. If a WS-X4148-FE-BD-LC port is connected to a converter box in SML mode, and the Ethernet cable on the box is removed, the port will eventually go into errdisable mode because of the continuous connecting and disconnecting (flapping) of the link.

  Workaround: Configure the convertor box (CPE device) to operate in either LT (Link Test) or ML (Missing Link) mode. (CSCed28409)

- A spurious error message appears when an SSH connection disconnects after an idle timeout.

  Workaround: Disable idle timeouts. (CSCec30214)

- When PBR is configured on a Supervisor Engine III or Supervisor Engine IV, hardware-switched PBR packets update the access list or route map statistics improperly.

  Workaround: None. (CSCdz10171)

- A CompactFlash module formatted on either Supervisor Engine III or Supervisor Engine IV that uses Cisco IOS Releases 12.1(14)E, 12.1(19)E, or 12.1(13)EW will not work on Supervisor Engine II-Plus. The CompactFlash module will continue to work on the other supervisor engines.

  Workaround: Format the CompactFlash module on any Catalyst 4500 series switch supervisor engine that uses Release 12.1(19)EW (or later). (CSCeb36355)

- When you enter the **access-list N permit host hostname** command on a redundant chassis operating in SSO mode, you might observe the following syslog messages. The command is not synchronized with the redundant supervisor engine, and keepalive warnings appear.

```
000099: Jul  9 01:22:36.478 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000100: Jul  9 01:22:46.534 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000101: Jul  9 01:22:56.566 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000102: Jul  9 01:23:06.598 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000103: Jul  9 01:23:16.642 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000104: Jul  9 01:23:26.682 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000105: Jul  9 01:23:36.721 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000106: Jul  9 01:23:46.777 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000107: Jul  9 01:23:56.793 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
```

  Workaround: When using the **access-list N permit host hostname** command, specify the IP address of the host rather than the hostname (CSCef67489)

- After a supervisor engine switchover in SSO mode, the Diagnostic Optical Monitoring feature (CLI and MIB support) might not work as expected. The **show interfaces transceiver** command will not display any output.

  Workaround: Reload the supervisor engines. (CSCef67309)

- After moving to a non-redundant chassis, a supervisor engine that was previously configured in SSO mode will not be able to configure router ports or port-channel.

  Workarounds:

  1. Before moving the supervisor engine to a non-redundancy-capable chassis, change the mode to RPR.

  2. Enter the **write memory** command and reload the switch from the non-redundancy chassis. (CSCef67677)

- When the access VLAN of an access port is converted into an RSPAN VLAN, the **show interface** and **show interface inactive** commands indicate that the interface is up and connected. This problem is strictly cosmetic; the interface is no longer forwarding traffic.

  Workaround: None. (CSCsa44090)

- When a Catalyst 4500 series switch exhausts the packet buffers and can no longer receive packets, the Rx-No_pkt_Buff field in the output of the **show platform interface all** command may not get updated.

  Workaround: None. (CSCef72691)

- In a hierarchical policer configuration with parent as the aggregate policer and child as the microflow policer, child microflow policer-matched packets report only the packets that are in the profile (they match the policing rate). Packets that exceed the policing rate are not reported in the class-map packet match statistics.

  Workaround: None. (CSCef88634)

- Per-flow Border Gateway Protocol (BGP) AS information is not collected. As a result, BGP AS information will not be available in any of the aggregation caches.

  Workaround: None. (CSCin85662)

- In rare instances, when you are using MAC ACL-based policers, the packet match counters in **show policy-map interface fa6/1** do not show the packets being matched:

```
clearwater#sh policy-map int
  FastEthernet3/2

   Service-policy output: p1

     Class-map: c1 (match-all)
       0 packets<--------It stays at '0' despite of traffic being received
       Match: access-group name fnacl21
       police: Per-interface
         Conform: 9426560 bytes Exceed: 16573440 bytes
```

  Workaround: Verify that the MAC addresses being transmitted through the system are learned.

  (CSCef01798)

- Multicast over Generic Routing Encapsulation (GRE) does not work.

  Workaround: None (CSCin85525)

- After an SSO switchover, you may receive a "PM-4-PORT_INCONSISTENT" error message on the switch console if you enter the **shutdown** command, then the **no shutdown** command on the port that is in UDLD error-disable state. This does not impact the switch; the port remains in UDLD error-disable state. Re-entering the **shutdown** command, then the **no shutdown** command on the same port will ensure that the error message does not re-appear.

  Workaround: None. (CSCeg48586)

- If you enter the **default interface** command at the interface level, then at the interface configuration level, any command you enter after a **macro apply** command is not accepted. The Help(?) feature will show only two options: exit and help.

  Workaround: Exit, then re-enter interface configuration mode. All commands will be accepted, even after you enter the **macro apply** command. (CSCsa44632)

- If the switch receives an unlearned source MAC address after a security violation, memory is consumed in creating a security violation-related SNMP trap for each source MAC address. If the switch receives several unlearned source MAC addresses at a very high rate, considerable memory is consumed to ensure that the SNMP traps are generated and sent out correctly.

  Workaround: Configure the trap-rate to limit very small number of traps every second. The following configuration sets a trap-rate of 1/2 trap per second (CSCeg41478):

```
Switch(config)#snmp-ser enable traps port-se trap-rate 1
Switch(config)#snmp-ser enable traps port-se trap-rate 2
```

- Under certain rare scenarios, the packet match counter in **show policy-map interface fa6/1** does not show the packets being matched, as in the following configuration:

```
clearwater#sh policy-map int
 FastEthernet6/2
```

```
Service-policy output: p4

  Class-map: ipc2 (match-all)
    0 packets<---------- It shouldn't stay at '0'.
    Match: access-group name ipacl_2
    police: Per-interface
      Conform: 22937970 bytes Exceed: 977688712 bytes <--- traffic going thru


  Class-map: class-default (match-any)
    410 packets
    Match: any
      410 packets
```

Workaround: Either enter a shutdown/no shutdown on the port or detach and reapply the service policy. (CSCef30883)

- When a switchport configured with port security is converted from an access to a promiscuous port, the port security configuration is lost. The **show interface** command will show that port security is no longer configured.

  Workaround: After converting a switchport with port security to a promiscuous port, apply the port security interface command again. (CSCeg41424)

- When changing the access VLAN ID on a sticky port configured with IPSG and voice VLAN, the secure MAC address counter on this port might become negative. This does not impact the system.

  Workaround: Avoid enabling IPSG on sticky ports that are configured with VVID. (CSCeg31712)

- The PoE status LED on the WS-X4506-GB-T linecard is always off. Moreover, PoE status does not appear in the output of the show environment command.

  Workaround: None. This was fixed in Cisco IOS Release 12.2(25)EWA. (CSCeh26976)

Resolved Caveats in Cisco IOS Release 12.2(25)EW

This section lists the resolved caveats in Release 12.2(25)EW:

- Under conditions where switch communication with the RADIUS server is broken or delayed, 802.1X may either cause the switch to crash or generate memory corruption tracebacks. This issue impacts Releases 12.1(20)EW, 12.2(18)EW, 12.2(18)EW1, 12.2(20)EW and 12.2(20)EWA.

  Workaround: None. (CSCef46146)

- When the gigabit port of a Catalyst 3550 switch with inline power (WS-C3550-25-PWR) is connected to the gigabit port of a Catalyst 4500 series switch with Supervisor Engine WS-X4516 and Release 12.2(18)EW or 12.2(20)EW, the gigabit uplink port on the Catalyst 3550 switch fails POST (lost loopback packet) during bootup.

  Workarounds:

  1. Disconnect the cable connecting the uplink ports on the Catalyst 3550 switch to the Catalyst 4500 series switch before booting the Catalyst 3550 switch. After the Catalyst 3550 switch boots, reconnect the cable.

  2. Shutdown the gigaports on the Catalyst 4500 series switch before booting the Catalyst 3550 switch. After the Catalyst 3550 switch boots, enter a **no shutdown** command on the gigaports of the Catalyst 4500 series switch. (CSC50578)

- Upon power-cycle, a Catalyst 4500 series switch with redundant supervisor engines and Release 12.2(20)EWA may indicate that all modules are faulty.

Workaround: Enter the **redundancy reload peer** command to reload the standby supervisor engine. Then, reset all the faulty line-cards with the **hw-module slot reset** command. (CSCsa44721)

- Cisco Internetwork Operating System (IOS®) Software is vulnerable to a Denial of Service (DoS) and potentially an arbitrary code execution attack from a specifically crafted IPv6 packet. The packet must be sent from a local network segment. Only devices that have been explicitly configured to process IPv6 traffic are affected. Upon successful exploitation, the device may reload or be open to further exploitation.

  Cisco has made free software available to address this vulnerability for all affected customers.

  More details can be found in the security advisory that is posted at http://www.cisco.com/warp/public/707/cisco-sa-20050729-ipv6.shtml. (CSCef68324)

Open Caveats in Cisco IOS Release 12.2(20)EWA4

This section lists the open caveats in Cisco IOS Release 12.2(20)EWA4:

- Changes to console speed are not updated in ROMMON. If a system is reloaded, you will not see a prompt until Cisco IOS software re-starts.

  Workaround: None. (CSCee65294)

- On a system reload, some of the QoS policies that had previously loaded into the hardware may fail to load due to limited space.

  Workaround: Disable QoS with the **no qos** command, and then reenable QoS with the **qos global** command. (CSCee52449)

- Insertion of unsupported SFPs (small form-factor pluggable optics) into a WS-X4448-GB-SFP or WS-X4448-GB-LX module and can cause undetected communication failures between the supervisor engine and the corresponding module. Subsequent insertion or removal of SFPs from the module is not recognized by the system. This behavior can be observed on a Catalyst 4500 series switch using Release 12.1(12c)EW1 or later releases.

  Workaround: Reset the module with the **hw-module module reset** command. (CSCee05078)

- When in SML (Smart Missing Link) mode, some converter boxes (CPE devices) send pulses on the optical side when the Ethernet cable is removed. These converter boxes should also have an LT (Link Test) mode in which the optical side stays active regardless of the connection status and an ML (Missing Link) mode in which the optical side always stays shut down if the Ethernet cable is disconnected. If a WS-X4148-FE-BD-LC port is connected to a converter box in SML mode, and the Ethernet cable on the box is removed, the port will eventually go into errdisable mode because of the continuous connecting and disconnecting (flapping) of the link.

  Workaround: Configure the convertor box (CPE device) to operate in either LT (Link Test) or ML (Missing Link) mode. (CSCed28409)

- A spurious error message appears when an SSH connection disconnects after an idle timeout.

  Workaround: Disable idle timeouts. (CSCec30214)

- When PBR is configured on a Supervisor Engine III or Supervisor Engine IV, hardware-switched PBR packets update the access list or route map statistics improperly.

  Workaround: None. (CSCdz10171)

- A CompactFlash module formatted on either Supervisor Engine III or Supervisor Engine IV that uses Cisco IOS Releases 12.1(14)E, 12.1(19)E, or 12.1(13)EW will not work on Supervisor Engine II-Plus. The CompactFlash module will continue to work on the other supervisor engines.

  Workaround: Format the CompactFlash module on any Catalyst 4500 series switch supervisor engine that uses Release 12.1(19)EW (or later). (CSCeb36355)

- When you enter the **access-list N permit host hostname** command on a redundant chassis operating in SSO mode, you might observe the following syslog messages. The command is not synchronized with the redundant supervisor engine, and keepalive warnings appear.

```
000099: Jul  9 01:22:36.478 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000100: Jul  9 01:22:46.534 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000101: Jul  9 01:22:56.566 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000102: Jul  9 01:23:06.598 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000103: Jul  9 01:23:16.642 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000104: Jul  9 01:23:26.682 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000105: Jul  9 01:23:36.721 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
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000106: Jul  9 01:23:46.777 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000107: Jul  9 01:23:56.793 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
```

  Workaround: When using the **access-list N permit host hostname** command, specify the IP address of the host rather than the hostname (CSCef67489)

- After a supervisor engine switchover in SSO mode, the Diagnostic Optical Monitoring feature (CLI and MIB support) might not work as expected. The **show interfaces transceiver** command will not display any output.

  Workaround: Reload the supervisor engines. (CSCef67309)

- After moving to a non-redundant chassis, a supervisor engine that was previously configured in SSO mode will not be able to configure router ports or port-channel.

  Workarounds:

  1. Before moving the supervisor engine to a non-redundancy-capable chassis, change the mode to RPR mode.

  2. If you do not perform the first workaround, enter the **write memory** command, and reload the switch from the non-redundancy chassis. (CSCef67677)

- The PoE status LED on the WS-X4506-GB-T linecard is always off. Moreover, PoE status does not appear in the output of the show environment command.

  Workaround: None. This was fixed in Cisco IOS Release 12.2(25)EWA. (CSCeh26976)

Resolved Caveats in Cisco IOS Release 12.2(20)EWA4

This section lists the resolved caveats in Release 12.2(20)EWA4:

- Some (or all) CDP neighbors are invisible.

  It only happens on releases that include the fix for CSCse85200.

When turning on "debug cdp even," the following message appears:

```
CDP-EV: Received item (type : 9) with invalid length 4
```

Workaround: None. (CSCsf07847)

- Symptoms: A router may crash if it receives a packet with a specific crafted IP option as detailed in Cisco Security Advisory: Crafted IP Option Vulnerability:

  http://www.cisco.com/warp/public/707/cisco-sa-20070124-crafted-ip-option.shtml

  Conditions: This DDTS resolves a symptom of CSCec71950. Cisco IOS with this specific DDTS are not at risk of crash if CSCec71950 has been resolved in the software.

  Workaround: Cisco IOS versions with the fix for CSCec71950 are not at risk for this issue and no workaround is required. If CSCec71950 is not resolved, see the following Cisco Security Advisory: Crafted IP Option Vulnerability for workaround information:

  http://www.cisco.com/warp/public/707/cisco-sa-20070124-crafted-ip-option.shtml

  (CSCek26492)

- Cisco routers and switches running Cisco IOS or Cisco IOS XR software may be vulnerable to a remotely exploitable crafted IP option Denial of Service (DoS) attack. Exploitation of the vulnerability may potentially allow for arbitrary code execution. The vulnerability may be exploited after processing an Internet Control Message Protocol (ICMP) packet, Protocol Independent Multicast version 2 (PIMv2) packet, Pragmatic General Multicast (PGM) packet, or URL Rendezvous Directory (URD) packet containing a specific crafted IP option in the packet's IP header. No other IP protocols are affected by this issue.

  Cisco has made free software available to address this vulnerability for affected customers.

  There are workarounds available to mitigate the effects of the vulnerability.

  This vulnerability was discovered during internal testing. This advisory is available at http://www.cisco.com/warp/public/707/cisco-sa-20070124-crafted-ip-option.shtml

  (CSCec71950)

Open Caveats in Cisco IOS Release 12.2(20)EWA3

This section lists the open caveats in Cisco IOS Release 12.2(20)EWA3:

- Changes to console speed are not updated in ROMMON. If a system is reloaded, you will not see a prompt until Cisco IOS software re-starts.

  Workaround: None. (CSCee65294)

- On a system reload, some of the QoS policies that had previously loaded into the hardware may fail to load due to limited space.

  Workaround: Disable QoS with the **no qos** command, and then reenable QoS with the **qos global** command. (CSCee52449)

- Insertion of unsupported SFPs (small form-factor pluggable optics) into a WS-X4448-GB-SFP or WS-X4448-GB-LX module and can cause undetected communication failures between the supervisor engine and the corresponding module. Subsequent insertion or removal of SFPs from the module is not recognized by the system. This behavior can be observed on a Catalyst 4500 series switch using Release 12.1(12c)EW1 or later releases.

  Workaround: Reset the module with the **hw-module module reset** command. (CSCee05078)

- When in SML (Smart Missing Link) mode, some converter boxes (CPE devices) send pulses on the optical side when the Ethernet cable is removed. These converter boxes should also have an LT (Link Test) mode in which the optical side stays active regardless of the connection status and an ML (Missing Link) mode in which the optical side always stays shut down if the Ethernet cable is disconnected. If a WS-X4148-FE-BD-LC port is connected to a converter box in SML mode, and the Ethernet cable on the box is removed, the port will eventually go into errdisable mode because of the continuous connecting and disconnecting (flapping) of the link.

  Workaround: Configure the convertor box (CPE device) to operate in either LT (Link Test) or ML (Missing Link) mode. (CSCed28409)

- A spurious error message appears when an SSH connection disconnects after an idle timeout.

  Workaround: Disable idle timeouts. (CSCec30214)

- When PBR is configured on a Supervisor Engine III or Supervisor Engine IV, hardware-switched PBR packets update the access list or route map statistics improperly.

  Workaround: None. (CSCdz10171)

- A CompactFlash module formatted on either Supervisor Engine III or Supervisor Engine IV that uses Cisco IOS Releases 12.1(14)E, 12.1(19)E, or 12.1(13)EW will not work on Supervisor Engine II-Plus. The CompactFlash module will continue to work on the other supervisor engines.

  Workaround: Format the CompactFlash module on any Catalyst 4500 series switch supervisor engine that uses Release 12.1(19)EW (or later). (CSCeb36355)

- When you enter the **access-list N permit host hostname** command on a redundant chassis operating in SSO mode, you might observe the following syslog messages. The command is not synchronized with the redundant supervisor engine, and keepalive warnings appear.

```
000099: Jul  9 01:22:36.478 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
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config-changed command to standby
000107: Jul  9 01:23:56.793 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
```

  Workaround: When using the **access-list N permit host hostname** command, specify the IP address of the host rather than the hostname (CSCef67489)

- After a supervisor engine switchover in SSO mode, the Diagnostic Optical Monitoring feature (CLI and MIB support) might not work as expected. The **show interfaces transceiver** command will not display any output.

  Workaround: Reload the supervisor engines. (CSCef67309)

- After moving to a non-redundant chassis, a supervisor engine that was previously configured in SSO mode will not be able to configure router ports or port-channel.

Workarounds:

1. Before moving the supervisor engine to a non-redundancy-capable chassis, change the mode to RPR mode.

2. If you do not perform the first workaround, enter the **write memory** command, and reload the switch from the non-redundancy chassis. (CSCef67677)

- The PoE status LED on the WS-X4506-GB-T linecard is always off. Moreover, PoE status does not appear in the output of the show environment command.

  Workaround: None. This was fixed in Cisco IOS Release 12.2(25)EWA. (CSCeh26976)

Resolved Caveats in Cisco IOS Release 12.2(20)EWA3

This section lists the resolved caveats in Release 12.2(20)EWA3:

- Through normal software maintenance processes, Cisco is removing deprecated functionality. These changes have no impact on system operation or feature availability. (CSCei76358)

Open Caveats in Cisco IOS Release 12.2(20)EWA2

This section lists the open caveats in Cisco IOS Release 12.2(20)EWA2:

- Changes to console speed are not updated in ROMMON. If a system is reloaded, you will not see a prompt until Cisco IOS software re-starts.

  Workaround: None. (CSCee65294)

- On a system reload, some of the QoS policies that had previously loaded into the hardware may fail to load due to limited space.

  Workaround: Disable QoS with the **no qos** command, and then reenable QoS with the **qos global** command. (CSCee52449)

- Insertion of unsupported SFPs (small form-factor pluggable optics) into a WS-X4448-GB-SFP or WS-X4448-GB-LX module and can cause undetected communication failures between the supervisor engine and the corresponding module. Subsequent insertion or removal of SFPs from the module is not recognized by the system. This behavior can be observed on a Catalyst 4500 series switch using Release 12.1(12c)EW1 or later releases.

  Workaround: Reset the module with the **hw-module module reset** command. (CSCee05078)

- When in SML (Smart Missing Link) mode, some converter boxes (CPE devices) send pulses on the optical side when the Ethernet cable is removed. These converter boxes should also have an LT (Link Test) mode in which the optical side stays active regardless of the connection status and an ML (Missing Link) mode in which the optical side always stays shut down if the Ethernet cable is disconnected. If a WS-X4148-FE-BD-LC port is connected to a converter box in SML mode, and the Ethernet cable on the box is removed, the port will eventually go into errdisable mode because of the continuous connecting and disconnecting (flapping) of the link.

  Workaround: Configure the convertor box (CPE device) to operate in either LT (Link Test) or ML (Missing Link) mode. (CSCed28409)

- A spurious error message appears when an SSH connection disconnects after an idle timeout.

  Workaround: Disable idle timeouts. (CSCec30214)

- When PBR is configured on a Supervisor Engine III or Supervisor Engine IV, hardware-switched PBR packets update the access list or route map statistics improperly.

Workaround: None. (CSCdz10171)

- A CompactFlash module formatted on either Supervisor Engine III or Supervisor Engine IV that uses Cisco IOS Releases 12.1(14)E, 12.1(19)E, or 12.1(13)EW will not work on Supervisor Engine II-Plus. The CompactFlash module will continue to work on the other supervisor engines.

  Workaround: Format the CompactFlash module on any Catalyst 4500 series switch supervisor engine that uses Release 12.1(19)EW (or later). (CSCeb36355)

- When you enter the **access-list N permit host hostname** command on a redundant chassis operating in SSO mode, you might observe the following syslog messages. The command is not synchronized with the redundant supervisor engine, and keepalive warnings appear.

```
000099: Jul  9 01:22:36.478 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
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config-changed command to standby
```

  Workaround: When using the **access-list N permit host hostname** command, specify the IP address of the host rather than the hostname (CSCef67489)

- After a supervisor engine switchover in SSO mode, the Diagnostic Optical Monitoring feature (CLI and MIB support) might not work as expected. The **show interfaces transceiver** command will not display any output.

  Workaround: Reload the supervisor engines. (CSCef67309)

- After moving to a non-redundant chassis, a supervisor engine that was previously configured in SSO mode will not be able to configure router ports or port-channel.

  Workarounds:

  1. Before moving the supervisor engine to a non-redundancy-capable chassis, change the mode to RPR mode.

  2. If you do not perform the first workaround, enter the **write memory** command, and reload the switch from the non-redundancy chassis. (CSCef67677)

- The PoE status LED on the WS-X4506-GB-T linecard is always off. Moreover, PoE status does not appear in the output of the show environment command.

  Workaround: None. This was fixed in Cisco IOS Release 12.2(25)EWA. (CSCeh26976)

Resolved Caveats in Cisco IOS Release 12.2(20)EWA2

This section lists the resolved caveats in Release 12.2(20)EWA2:

- Cisco Internetwork Operating System (IOS®) Software is vulnerable to a Denial of Service (DoS) and potentially an arbitrary code execution attack from a specifically crafted IPv6 packet. The packet must be sent from a local network segment. Only devices that have been explicitly configured to process IPv6 traffic are affected. Upon successful exploitation, the device may reload or be open to further exploitation.

  Cisco has made free software available to address this vulnerability for all affected customers.

  More details can be found in the security advisory that is posted at http://www.cisco.com/warp/public/707/cisco-sa-20050729-ipv6.shtml. (CSCef68324)

Open Caveats in Cisco IOS Release 12.2(20)EWA1

This section lists the open caveats in Cisco IOS Release 12.2(20)EWA1:

- Changes to console speed are not updated in ROMMON. If a system is reloaded, you will not see a prompt until Cisco IOS software re-starts.

  Workaround: None. (CSCee65294)

- On a system reload, some of the QoS policies that had previously loaded into the hardware may fail to load due to limited space.

  Workaround: Disable QoS with the **no qos** command, and then reenable QoS with the **qos global** command. (CSCee52449)

- Insertion of unsupported SFPs (small form-factor pluggable optics) into a WS-X4448-GB-SFP or WS-X4448-GB-LX module and can cause undetected communication failures between the supervisor engine and the corresponding module. Subsequent insertion or removal of SFPs from the module is not recognized by the system. This behavior can be observed on a Catalyst 4500 series switch using Release 12.1(12c)EW1 or later releases.

  Workaround: Reset the module with the **hw-module module reset** command. (CSCee05078)

- When in SML (Smart Missing Link) mode, some converter boxes (CPE devices) send pulses on the optical side when the Ethernet cable is removed. These converter boxes should also have an LT (Link Test) mode in which the optical side stays active regardless of the connection status and an ML (Missing Link) mode in which the optical side always stays shut down if the Ethernet cable is disconnected. If a WS-X4148-FE-BD-LC port is connected to a converter box in SML mode, and the Ethernet cable on the box is removed, the port will eventually go into errdisable mode because of the continuous connecting and disconnecting (flapping) of the link.

  Workaround: Configure the convertor box (CPE device) to operate in either LT (Link Test) or ML (Missing Link) mode. (CSCed28409)

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- When PBR is configured on a Supervisor Engine III or Supervisor Engine IV, hardware-switched PBR packets update the access list or route map statistics improperly.

  Workaround: None. (CSCdz10171)

- A CompactFlash module formatted on either Supervisor Engine III or Supervisor Engine IV that uses Cisco IOS Releases 12.1(14)E, 12.1(19)E, or 12.1(13)EW will not work on Supervisor Engine II-Plus. The CompactFlash module will continue to work on the other supervisor engines.

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000104: Jul  9 01:23:26.682 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000105: Jul  9 01:23:36.721 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000106: Jul  9 01:23:46.777 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000107: Jul  9 01:23:56.793 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
```

  Workaround: When using the **access-list N permit host hostname** command, specify the IP address of the host rather than the hostname (CSCef67489)

- After a supervisor engine switchover in SSO mode, the Diagnostic Optical Monitoring feature (CLI and MIB support) might not work as expected. The **show interfaces transceiver** command will not display any output.

  Workaround: Reload the supervisor engines. (CSCef67309)

- After moving to a non-redundant chassis, a supervisor engine that was previously configured in SSO mode will not be able to configure router ports or port-channel.

  Workarounds:

  1. Before moving the supervisor engine to a non-redundancy-capable chassis, change the mode to RPR mode.

  2. If you do not perform the first workaround, enter the **write memory** command, and reload the switch from the non-redundancy chassis. (CSCef67677)

- The PoE status LED on the WS-X4506-GB-T linecard is always off. Moreover, PoE status does not appear in the output of the show environment command.

  Workaround: None. This was fixed in Cisco IOS Release 12.2(25)EWA. (CSCeh26976)

Resolved Caveats in Cisco IOS Release 12.2(20)EWA1

This section lists the resolved caveats in Release 12.2(20)EWA1:

- NetFlow Feature Acceleration has been deprecated and removed from Cisco IOS. The global command **ip flow-cache feature-accelerate** will no longer be recognized in any IOS configuration.

If your router configuration does not currently contain the command **ip flow-cache feature-accelerate**, this change does not affect you.

The removal of NetFlow Feature Acceleration does not affect any other aspects of Netflow operation, for example Access-list processing. The features are separate and distinct.

Cisco Express Forwarding (CEF) supercedes the deprecated NetFlow Feature Acceleration.

Additionally, the following MIB objects and OIDs have been deprecated and removed from the netflow mib (CISCO-NETFLOW-MIB):

```
cnfFeatureAcceleration        1.3.6.1.4.1.9.9.99999.1.3
cnfFeatureAccelerationEnable  1.3.6.1.4.1.9.9.99999.1.3.1
cnfFeatureAvailableSlot       1.3.6.1.4.1.9.9.99999.1.3.2
cnfFeatureActiveSlot          1.3.6.1.4.1.9.9.99999.1.3.3
cnfFeatureTable               1.3.6.1.4.1.9.9.99999.1.3.4
cnfFeatureEntry               1.3.6.1.4.1.9.9.99999.1.3.4.1
cnfFeatureType                1.3.6.1.4.1.9.9.99999.1.3.4.1.1
cnfFeatureSlot                1.3.6.1.4.1.9.9.99999.1.3.4.1.2
cnfFeatureActive              1.3.6.1.4.1.9.9.99999.1.3.4.1.3
cnfFeatureAttaches            1.3.6.1.4.1.9.9.99999.1.3.4.1.4
cnfFeatureDetaches            1.3.6.1.4.1.9.9.99999.1.3.4.1.5
cnfFeatureConfigChanges       1.3.6.1.4.1.9.9.99999.1.3.4.1.6
```

(CSCsa81379)

Open Caveats in Cisco IOS Release 12.2(20)EWA

This section lists the open caveats in Cisco IOS Release 12.2(20)EWA.

- Changes to console speed are not updated in ROMMON. If a system is reloaded, you will not see a prompt until Cisco IOS software re-starts.

  Workaround: None. (CSCee65294)

- On a system reload, some of the QoS policies that had previously loaded into the hardware may fail to load due to limited space.

  Workaround: Disable QoS with the **no qos** command, and then reenable QoS with the **qos global** command. (CSCee52449)

- Insertion of unsupported SFPs (small form-factor pluggable optics) into a WS-X4448-GB-SFP or WS-X4448-GB-LX module and can cause undetected communication failures between the supervisor engine and the corresponding module. Subsequent insertion or removal of SFPs from the module is not recognized by the system. This behavior can be observed on a Catalyst 4500 series switch using Release 12.1(12c)EW1 or later releases.

  Workaround: Reset the module with the **hw-module module reset** command. (CSCee05078)

- When in SML (Smart Missing Link) mode, some converter boxes (CPE devices) send pulses on the optical side when the Ethernet cable is removed. These converter boxes should also have an LT (Link Test) mode in which the optical side stays active regardless of the connection status and an ML (Missing Link) mode in which the optical side always stays shut down if the Ethernet cable is disconnected. If a WS-X4148-FE-BD-LC port is connected to a converter box in SML mode, and the Ethernet cable on the box is removed, the port will eventually go into errdisable mode because of the continuous connecting and disconnecting (flapping) of the link.

  Workaround: Configure the convertor box (CPE device) to operate in either LT (Link Test) or ML (Missing Link) mode. (CSCed28409)

- A spurious error message appears when an SSH connection disconnects after an idle timeout.

  Workaround: Disable idle timeouts. (CSCec30214)

- When PBR is configured on a Supervisor Engine III or Supervisor Engine IV, hardware-switched PBR packets update the access list or route map statistics improperly.

  Workaround: None. (CSCdz10171)

- A CompactFlash module formatted on either Supervisor Engine III or Supervisor Engine IV that uses Cisco IOS Releases 12.1(14)E, 12.1(19)E, or 12.1(13)EW will not work on Supervisor Engine II-Plus. The CompactFlash module will continue to work on the other supervisor engines.

  Workaround: Format the CompactFlash module on any Catalyst 4500 series switch supervisor engine that uses Release 12.1(19)EW (or later). (CSCeb36355)

- When you enter the **access-list N permit host hostname** command on a redundant chassis operating in SSO mode, you might observe the following syslog messages. The command is not synchronized with the redundant supervisor engine, and keepalive warnings appear.

```
000099: Jul  9 01:22:36.478 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000100: Jul  9 01:22:46.534 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000101: Jul  9 01:22:56.566 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000102: Jul  9 01:23:06.598 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000103: Jul  9 01:23:16.642 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000104: Jul  9 01:23:26.682 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000105: Jul  9 01:23:36.721 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000106: Jul  9 01:23:46.777 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
000107: Jul  9 01:23:56.793 PDT: %HA_CONFIG_SYNC-3-LBL_CFGSYNC: Unable to sync
config-changed command to standby
```

  Workaround: When using the **access-list N permit host hostname** command, specify the IP address of the host rather than the hostname (CSCef67489)

- After a supervisor engine switchover in SSO mode, the Diagnostic Optical Monitoring feature (CLI and MIB support) might not work as expected. The **show interfaces transceiver** command will not display any output.

  Workaround: Reload the supervisor engines. (CSCef67309)

- After moving to a non-redundant chassis, a supervisor engine that was previously configured in SSO mode will not be able to configure router ports or port-channel.

  Workarounds:

  1. Before moving the supervisor engine to a non-redundancy-capable chassis, change the mode to RPR mode.

  2. If you do not perform the first workaround, enter the **write memory** command, and reload the switch from the non-redundancy chassis. (CSCef67677)

- The PoE status LED on the WS-X4506-GB-T linecard is always off. Moreover, PoE status does not appear in the output of the show environment command.

  Workaround: None. This was fixed in Cisco IOS Release 12.2(25)EWA. (CSCeh26976)

Resolved Caveats in Cisco IOS Release 12.2(20)EWA

This section lists the resolved caveats in Release 12.2(20)EWA:

- The DHCP snooping database agent has a maximum of 8192 entries. If the number of DHCP bindings learned by the system exceeds this number, the entries in the database agent will be cleared out, the entries in hardware will be retained, and switching will continue. However, upon reload, bindings and connectivity will be lost.

  Workaround: None. (CSCee34375)

- If IP source guard and QoS policies with large ACLs are configured on an interface, deleting the QoS policy will not clear the policers from the hardware.

  Workaround: Either remove the IP source guard configuration using the **no ip verify source vlan dhcp-snooping port-security** command and reconfigure using the **ip verify source vlan dhcp-snooping port-security** command or shut down the interface (after removing the policy) using the **shutdown** command, and reactivate it using the **no shutdown** command. (CSCee44402)

- A Catalyst 4500 series switch with a 1000 W power supply might display the following message during bootup sequence and also when you enter the **show idprom power-supply** command:

  ```
  %C4K_SUPERVISOR-3-POWERSUPPLYSEEPROMINVALID: Invalid data in power supply 1's serial
  eeprom
  ```

  This is cosmetic only and does not impact system performance. (CSCee54636)

- When you use private VLANs on the Catalyst 4500 series switch Supervisor Engine V (WS-X4516), old ARP entries will not timeout of the ARP cache without manually clearing the ARP entry. This has no effect on production.

  Workaround: Issue the **clear arp** command on the supervisor engine. (CSCee73094)

Open Caveats in Cisco IOS Release 12.2(20)EW4

This section lists the open caveats in Cisco IOS Release 12.2(20)EW4.

- For Release 12.2(18)EW or later, when the Gigabit Ethernet port of a Catalyst 3550 switch with inline power (WS-C3550-25-PWR) is connected to the Gigabit Ethernet port of a Catalyst 4500 series switch with a Supervisor Engine V (WS-X4516), the port on the Catalyst 3500 switch fails POST (power-on self test) during startup.

  Workarounds:

  1. Before starting up the Catalyst 3550 switch, disconnect the cable connecting the uplink ports on the Catalyst 3550 switch to the Catalyst 4500 series switch. Once the Catalyst 3550 switch boots, reconnect the cable.

  2. Before starting up the Catalyst 3550 switch, issue the **shutdown** command on the Gigabit Ethernet ports on the Catalyst 4500 series switch. After starting up the Catalyst 3550 switch, issue the **no shutdown** command on the Gigabit Ethernet ports on the Catalyst 4500 switch. (CSCee50578)

- Changes to console speed are not updated in ROMMON. If a system is reloaded, you will not see a prompt until Cisco IOS software re-starts.

  Workaround: None. (CSCee65294)

- The DHCP snooping database agent has a maximum of 8192 entries. If the number of DHCP bindings learned by the system exceeds this number, the entries in the database agent will be cleared out, the entries in hardware will be retained, and switching will continue. However, upon reload, bindings and connectivity will be lost.

  Workaround: None. (CSCee34375)

- If IP source guard and QoS policies with large ACLs are configured on an interface, deleting the QoS policy will not clear the policers from the hardware.

  Workaround: Either remove the IP source guard configuration using the **no ip verify source vlan dhcp-snooping port-security** command and reconfigure using **ip verify source vlan dhcp-snooping port-security** command or shut down the interface (after removing the policy) using the **shutdown** command and reactivate it using the **no shutdown** command. (CSCee44402)

- On a system reload, some of the QoS policies that had previously loaded into the hardware, may fail to load due to limited space.

  Workaround: Disable QoS with the **no qos** command, then reenable QoS with the **qos global** command. (CSCee52449)

- Insertion of unsupported SFPs (small form-factor pluggable optics) into a WS-X4448-GB-SFP or WS-X4448-GB-LX module and can cause undetected communication failures between the supervisor engine and the corresponding module. Subsequent insertion or removal of SFPs from the module is not recognized by the system. This behavior can be observed on a Catalyst 4500 series switch using Release 12.1(12c)EW1 or later.

  Workaround: Reset the module with the **hw-module module reset** command. (CSCee05078)

- When in SML (Smart Missing Link) mode, some converter boxes (CPE devices) send pulses on the optical side when the Ethernet cable is removed. These converter boxes should also have an LT (Link Test) mode in which the optical side stays active regardless of the connection status and an ML (Missing Link) mode in which the optical side always stays shut down if the Ethernet cable is disconnected. If a WS-X4148-FE-BD-LC port is connected to a converter box in SML mode, and the Ethernet cable on the box is removed, the port will eventually go into errdisable mode because of the continuous connecting and disconnecting flapping of the link.

  Workaround: Configure the convertor box (CPE device) to operate in either LT (Link Test) or ML (Missing Link) mode. (CSCed28409)

- A spurious error message appears when an SSH connection disconnects after an idle timeout.

  Workaround: Disable idle timeouts. (CSCec30214)

- When PBR is configured on a Supervisor Engine III or Supervisor Engine IV, hardware-switched PBR packets update the access list or route map statistics improperly.

  Workaround: None. (CSCdz10171)

- A CompactFlash module formatted on either Supervisor Engine III or Supervisor Engine IV that uses Cisco IOS Releases 12.1(14)E, 12.1(19)E, or 12.1(13)EW will not work on Supervisor Engine II-Plus. The CompactFlash module will continue to work on the other supervisor engines.

  Workaround: Format the CompactFlash module on any Catalyst 4500 series switch supervisor engine that uses Release 12.1(19)EW (or later). (CSCeb36355)

Resolved Caveats in Cisco IOS Release 12.2(20)EW4

This section lists the resolved caveats in release 12.2(20)EW4:

- Some (or all) CDP neighbors are invisible.

  It only happens on releases that include the fix for CSCse85200.

  When turning on "debug cdp even," the following message appears:

  ```
  CDP-EV: Received item (type : 9) with invalid length 4
  ```

  Workaround: None. (CSCsf07847)

- Symptoms: A router may crash if it receives a packet with a specific crafted IP option as detailed in Cisco Security Advisory: Crafted IP Option Vulnerability:

  http://www.cisco.com/warp/public/707/cisco-sa-20070124-crafted-ip-option.shtml

  Conditions: This DDTS resolves a symptom of CSCec71950. Cisco IOS with this specific DDTS are not at risk of crash if CSCec71950 has been resolved in the software.

  Workaround: Cisco IOS versions with the fix for CSCec71950 are not at risk for this issue and no workaround is required. If CSCec71950 is not resolved, see the following Cisco Security Advisory: Crafted IP Option Vulnerability for workaround information:

  http://www.cisco.com/warp/public/707/cisco-sa-20070124-crafted-ip-option.shtml

  (CSCek26492)

- CSCec71950

  Cisco routers and switches running Cisco IOS or Cisco IOS XR software may be vulnerable to a remotely exploitable crafted IP option Denial of Service (DoS) attack. Exploitation of the vulnerability may potentially allow for arbitrary code execution. The vulnerability may be exploited after processing an Internet Control Message Protocol (ICMP) packet, Protocol Independent Multicast version 2 (PIMv2) packet, Pragmatic General Multicast (PGM) packet, or URL Rendezvous Directory (URD) packet containing a specific crafted IP option in the packet's IP header. No other IP protocols are affected by this issue.

  Cisco has made free software available to address this vulnerability for affected customers.

  There are workarounds available to mitigate the effects of the vulnerability.

  This vulnerability was discovered during internal testing. This advisory is available at http://www.cisco.com/warp/public/707/cisco-sa-20070124-crafted-ip-option.shtml

Open Caveats in Cisco IOS Release 12.2(20)EW3

This section lists the open caveats in Cisco IOS Release 12.2(20)EW3.

- For Release 12.2(18)EW or later, when the Gigabit Ethernet port of a Catalyst 3550 switch with inline power (WS-C3550-25-PWR) is connected to the Gigabit Ethernet port of a Catalyst 4500 series switch with a Supervisor Engine V (WS-X4516), the port on the Catalyst 3500 switch fails POST (power-on self test) during startup.

  Workarounds:

  1. Before starting up the Catalyst 3550 switch, disconnect the cable connecting the uplink ports on the Catalyst 3550 switch to the Catalyst 4500 series switch. Once the Catalyst 3550 switch boots, reconnect the cable.

2. Before starting up the Catalyst 3550 switch, issue the **shutdown** command on the Gigabit Ethernet ports on the Catalyst 4500 series switch. After starting up the Catalyst 3550 switch, issue the **no shutdown** command on the Gigabit Ethernet ports on the Catalyst 4500 switch. (CSCee50578)

- Changes to console speed are not updated in ROMMON. If a system is reloaded, you will not see a prompt until Cisco IOS software re-starts.

  Workaround: None. (CSCee65294)

- The DHCP snooping database agent has a maximum of 8192 entries. If the number of DHCP bindings learned by the system exceeds this number, the entries in the database agent will be cleared out, the entries in hardware will be retained, and switching will continue. However, upon reload, bindings and connectivity will be lost.

  Workaround: None. (CSCee34375)

- If IP source guard and QoS policies with large ACLs are configured on an interface, deleting the QoS policy will not clear the policers from the hardware.

  Workaround: Either remove the IP source guard configuration using the **no ip verify source vlan dhcp-snooping port-security** command and reconfigure using **ip verify source vlan dhcp-snooping port-security** command or shut down the interface (after removing the policy) using the **shutdown** command and reactivate it using the **no shutdown** command. (CSCee44402)

- On a system reload, some of the QoS policies that had previously loaded into the hardware, may fail to load due to limited space.

  Workaround: Disable QoS with the **no qos** command, then reenable QoS with the **qos global** command. (CSCee52449)

- Insertion of unsupported SFPs (small form-factor pluggable optics) into a WS-X4448-GB-SFP or WS-X4448-GB-LX module and can cause undetected communication failures between the supervisor engine and the corresponding module. Subsequent insertion or removal of SFPs from the module is not recognized by the system. This behavior can be observed on a Catalyst 4500 series switch using Release 12.1(12c)EW1 or later.

  Workaround: Reset the module with the **hw-module module reset** command. (CSCee05078)

- When in SML (Smart Missing Link) mode, some converter boxes (CPE devices) send pulses on the optical side when the Ethernet cable is removed. These converter boxes should also have an LT (Link Test) mode in which the optical side stays active regardless of the connection status and an ML (Missing Link) mode in which the optical side always stays shut down if the Ethernet cable is disconnected. If a WS-X4148-FE-BD-LC port is connected to a converter box in SML mode, and the Ethernet cable on the box is removed, the port will eventually go into errdisable mode because of the continuous connecting and disconnecting flapping of the link.

  Workaround: Configure the convertor box (CPE device) to operate in either LT (Link Test) or ML (Missing Link) mode. (CSCed28409)

- A spurious error message appears when an SSH connection disconnects after an idle timeout.

  Workaround: Disable idle timeouts. (CSCec30214)

- When PBR is configured on a Supervisor Engine III or Supervisor Engine IV, hardware-switched PBR packets update the access list or route map statistics improperly.

  Workaround: None. (CSCdz10171)

- A CompactFlash module formatted on either Supervisor Engine III or Supervisor Engine IV that uses Cisco IOS Releases 12.1(14)E, 12.1(19)E, or 12.1(13)EW will not work on Supervisor Engine II-Plus. The CompactFlash module will continue to work on the other supervisor engines.

  Workaround: Format the CompactFlash module on any Catalyst 4500 series switch supervisor engine that uses Release 12.1(19)EW (or later). (CSCeb36355)

Resolved Caveats in Cisco IOS Release 12.2(20)EW3

This section lists the resolved caveats in release 12.2(20)EW3:

- Through normal software maintenance processes, Cisco is removing deprecated functionality. These changes have no impact on system operation or feature availability. (CSCei76358)
- Cisco IOS may permit arbitrary code execution after exploitation of a heap-based buffer overflow vulnerability. Cisco has included additional integrity checks in its software, as further described below, that are intended to reduce the likelihood of arbitrary code execution.

  Cisco has made free software available that includes the additional integrity checks for affected customers.

  This advisory is posted at http://www.cisco.com/warp/public/707/cisco-sa-20051102-timers.shtml. (CSCei61732)

Open Caveats in Cisco IOS Release 12.2(20)EW2

This section lists the open caveats in Cisco IOS Release 12.2(20)EW2.

- For Release 12.2(18)EW or later, when the Gigabit Ethernet port of a Catalyst 3550 switch with inline power (WS-C3550-25-PWR) is connected to the Gigabit Ethernet port of a Catalyst 4500 series switch with a Supervisor Engine V (WS-X4516), the port on the Catalyst 3500 switch fails POST (power-on self test) during startup.

  Workarounds:

  1. Before starting up the Catalyst 3550 switch, disconnect the cable connecting the uplink ports on the Catalyst 3550 switch to the Catalyst 4500 series switch. Once the Catalyst 3550 switch boots, reconnect the cable.

  2. Before starting up the Catalyst 3550 switch, issue the **shutdown** command on the Gigabit Ethernet ports on the Catalyst 4500 series switch. After starting up the Catalyst 3550 switch, issue the **no shutdown** command on the Gigabit Ethernet ports on the Catalyst 4500 switch. (CSCee50578)
- Changes to console speed are not updated in ROMMON. If a system is reloaded, you will not see a prompt until Cisco IOS software re-starts.

  Workaround: None. (CSCee65294)
- The DHCP snooping database agent has a maximum of 8192 entries. If the number of DHCP bindings learned by the system exceeds this number, the entries in the database agent will be cleared out, the entries in hardware will be retained, and switching will continue. However, upon reload, bindings and connectivity will be lost.

  Workaround: None. (CSCee34375)
- If IP source guard and QoS policies with large ACLs are configured on an interface, deleting the QoS policy will not clear the policers from the hardware.

Workaround: Either remove the IP source guard configuration using the **no ip verify source vlan dhcp-snooping port-security** command and reconfigure using **ip verify source vlan dhcp-snooping port-security** command or shut down the interface (after removing the policy) using the **shutdown** command and reactivate it using the **no shutdown** command. (CSCee44402)

- On a system reload, some of the QoS policies that had previously loaded into the hardware, may fail to load due to limited space.

  Workaround: Disable QoS with the **no qos** command, then reenable QoS with the **qos global** command. (CSCee52449)

- Insertion of unsupported SFPs (small form-factor pluggable optics) into a WS-X4448-GB-SFP or WS-X4448-GB-LX module and can cause undetected communication failures between the supervisor engine and the corresponding module. Subsequent insertion or removal of SFPs from the module is not recognized by the system. This behavior can be observed on a Catalyst 4500 series switch using Release 12.1(12c)EW1 or later.

  Workaround: Reset the module with the **hw-module module reset** command. (CSCee05078)

- When in SML (Smart Missing Link) mode, some converter boxes (CPE devices) send pulses on the optical side when the Ethernet cable is removed. These converter boxes should also have an LT (Link Test) mode in which the optical side stays active regardless of the connection status and an ML (Missing Link) mode in which the optical side always stays shut down if the Ethernet cable is disconnected. If a WS-X4148-FE-BD-LC port is connected to a converter box in SML mode, and the Ethernet cable on the box is removed, the port will eventually go into errdisable mode because of the continuous connecting and disconnecting flapping of the link.

  Workaround: Configure the convertor box (CPE device) to operate in either LT (Link Test) or ML (Missing Link) mode. (CSCed28409)

- A spurious error message appears when an SSH connection disconnects after an idle timeout.

  Workaround: Disable idle timeouts. (CSCec30214)

- When PBR is configured on a Supervisor Engine III or Supervisor Engine IV, hardware-switched PBR packets update the access list or route map statistics improperly.

  Workaround: None. (CSCdz10171)

- A CompactFlash module formatted on either Supervisor Engine III or Supervisor Engine IV that uses Cisco IOS Releases 12.1(14)E, 12.1(19)E, or 12.1(13)EW will not work on Supervisor Engine II-Plus. The CompactFlash module will continue to work on the other supervisor engines.

  Workaround: Format the CompactFlash module on any Catalyst 4500 series switch supervisor engine that uses Release 12.1(19)EW (or later). (CSCeb36355)

Resolved Caveats in Cisco IOS Release 12.2(20)EW2

This section lists the resolved caveats in release 12.2(20)EW2:

- Cisco Internetwork Operating System (IOS®) Software is vulnerable to a Denial of Service (DoS) and potentially an arbitrary code execution attack from a specifically crafted IPv6 packet. The packet must be sent from a local network segment. Only devices that have been explicitly configured to process IPv6 traffic are affected. Upon successful exploitation, the device may reload or be open to further exploitation.

  Cisco has made free software available to address this vulnerability for all affected customers.

More details can be found in the security advisory that is posted at http://www.cisco.com/warp/public/707/cisco-sa-20050729-ipv6.shtml. (CSCef68324)

Open Caveats in Cisco IOS Release 12.2(20)EW1

This section lists the open caveats in Cisco IOS Release 12.2(20)EW1.

- For Release 12.2(18)EW or later, when the Gigabit Ethernet port of a Catalyst 3550 switch with inline power (WS-C3550-25-PWR) is connected to the Gigabit Ethernet port of a Catalyst 4500 series switch with a Supervisor Engine V (WS-X4516), the port on the Catalyst 3500 switch fails POST (power-on self test) during startup.

  Workarounds:

  1. Before starting up the Catalyst 3550 switch, disconnect the cable connecting the uplink ports on the Catalyst 3550 switch to the Catalyst 4500 series switch. Once the Catalyst 3550 switch boots, reconnect the cable.

  2. Before starting up the Catalyst 3550 switch, issue the **shutdown** command on the Gigabit Ethernet ports on the Catalyst 4500 series switch. After starting up the Catalyst 3550 switch, issue the **no shutdown** command on the Gigabit Ethernet ports on the Catalyst 4500 switch. (CSCee50578)

- Changes to console speed are not updated in ROMMON. If a system is reloaded, you will not see a prompt until Cisco IOS software re-starts.

  Workaround: None. (CSCee65294)

- The DHCP snooping database agent has a maximum of 8192 entries. If the number of DHCP bindings learned by the system exceeds this number, the entries in the database agent will be cleared out, the entries in hardware will be retained, and switching will continue. However, upon reload, bindings and connectivity will be lost.

  Workaround: None. (CSCee34375)

- If IP source guard and QoS policies with large ACLs are configured on an interface, deleting the QoS policy will not clear the policers from the hardware.

  Workaround: Either remove the IP source guard configuration using the **no ip verify source vlan dhcp-snooping port-security** command and reconfigure using **ip verify source vlan dhcp-snooping port-security** command or shut down the interface (after removing the policy) using the **shutdown** command and reactivate it using the **no shutdown** command. (CSCee44402)

- On a system reload, some of the QoS policies that had previously loaded into the hardware, may fail to load due to limited space.

  Workaround: Disable QoS with the **no qos** command, then reenable QoS with the **qos global** command. (CSCee52449)

- Insertion of unsupported SFPs (small form-factor pluggable optics) into a WS-X4448-GB-SFP or WS-X4448-GB-LX module and can cause undetected communication failures between the supervisor engine and the corresponding module. Subsequent insertion or removal of SFPs from the module is not recognized by the system. This behavior can be observed on a Catalyst 4500 series switch using Release 12.1(12c)EW1 or later.

  Workaround: Reset the module with the **hw-module module reset** command. (CSCee05078)

- When in SML (Smart Missing Link) mode, some converter boxes (CPE devices) send pulses on the optical side when the Ethernet cable is removed. These converter boxes should also have an LT (Link Test) mode in which the optical side stays active regardless of the connection status and an ML (Missing Link) mode in which the optical side always stays shut down if the Ethernet cable is disconnected. If a WS-X4148-FE-BD-LC port is connected to a converter box in SML mode, and the Ethernet cable on the box is removed, the port will eventually go into errdisable mode because of the continuous connecting and disconnecting flapping of the link.

  Workaround: Configure the convertor box (CPE device) to operate in either LT (Link Test) or ML (Missing Link) mode. (CSCed28409)

- A spurious error message appears when an SSH connection disconnects after an idle timeout.

  Workaround: Disable idle timeouts. (CSCec30214)

- When PBR is configured on a Supervisor Engine III or Supervisor Engine IV, hardware-switched PBR packets update the access list or route map statistics improperly.

  Workaround: None. (CSCdz10171)

- A CompactFlash module formatted on either Supervisor Engine III or Supervisor Engine IV that uses Cisco IOS Releases 12.1(14)E, 12.1(19)E, or 12.1(13)EW will not work on Supervisor Engine II-Plus. The CompactFlash module will continue to work on the other supervisor engines.

  Workaround: Format the CompactFlash module on any Catalyst 4500 series switch supervisor engine that uses Release 12.1(19)EW (or later). (CSCeb36355)

Resolved Caveats in Cisco IOS Release 12.2(20)EW1

This section lists the resolved caveats in release 12.2(20)EW1:

- NetFlow Feature Acceleration has been deprecated and removed from Cisco IOS. The global command **ip flow-cache feature-accelerate** will no longer be recognized in any IOS configuration.

  If your router configuration does not currently contain the command **ip flow-cache feature-accelerate**, this change does not affect you.

  The removal of NetFlow Feature Acceleration does not affect any other aspects of Netflow operation, for example Access-list processing. The features are separate and distinct.

  Cisco Express Forwarding (CEF) supersedes the deprecated NetFlow Feature Acceleration.

  Additionally, the following MIB objects and OIDs have been deprecated and removed from the netflow mib (CISCO-NETFLOW-MIB):

```
cnfFeatureAcceleration        1.3.6.1.4.1.9.9.99999.1.3
cnfFeatureAccelerationEnable  1.3.6.1.4.1.9.9.99999.1.3.1
cnfFeatureAvailableSlot       1.3.6.1.4.1.9.9.99999.1.3.2
cnfFeatureActiveSlot          1.3.6.1.4.1.9.9.99999.1.3.3
cnfFeatureTable               1.3.6.1.4.1.9.9.99999.1.3.4
cnfFeatureEntry               1.3.6.1.4.1.9.9.99999.1.3.4.1
cnfFeatureType                1.3.6.1.4.1.9.9.99999.1.3.4.1.1
cnfFeatureSlot                1.3.6.1.4.1.9.9.99999.1.3.4.1.2
cnfFeatureActive              1.3.6.1.4.1.9.9.99999.1.3.4.1.3
cnfFeatureAttaches            1.3.6.1.4.1.9.9.99999.1.3.4.1.4
cnfFeatureDetaches            1.3.6.1.4.1.9.9.99999.1.3.4.1.5
cnfFeatureConfigChanges       1.3.6.1.4.1.9.9.99999.1.3.4.1.6
```

  (CSCsa81379)

Open Caveats in Cisco IOS Release 12.2(20)EW

This section lists the open caveats in Cisco IOS Release 12.2(20)EW.

- For Release 12.2(18)EW or later, when the Gigabit Ethernet port of a Catalyst 3550 switch with inline power (WS-C3550-25-PWR) is connected to the Gigabit Ethernet port of a Catalyst 4500 series switch with a Supervisor Engine V (WS-X4516), the port on the Catalyst 3500 switch fails POST (power-on self test) during startup.

  Workarounds:

  1. Before starting up the Catalyst 3550 switch, disconnect the cable connecting the uplink ports on the Catalyst 3550 switch to the Catalyst 4500 series switch. Once the Catalyst 3550 switch boots, reconnect the cable.

  2. Before starting up the Catalyst 3550 switch, issue the **shutdown** command on the Gigabit Ethernet ports on the Catalyst 4500 series switch. After starting up the Catalyst 3550 switch, issue the **no shutdown** command on the Gigabit Ethernet ports on the Catalyst 4500 switch. (CSCee50578)

- Changes to console speed are not updated in ROMMON. If a system is reloaded, you will not see a prompt until Cisco IOS software re-starts.

  Workaround: None. (CSCee65294)

- The DHCP snooping database agent has a maximum of 8192 entries. If the number of DHCP bindings learned by the system exceeds this number, the entries in the database agent will be cleared out, the entries in hardware will be retained, and switching will continue. However, upon reload, bindings and connectivity will be lost.

  Workaround: None. (CSCee34375)

- If IP source guard and QoS policies with large ACLs are configured on an interface, deleting the QoS policy will not clear the policers from the hardware.

  Workaround: Either remove the IP source guard configuration using the **no ip verify source vlan dhcp-snooping port-security** command and reconfigure using **ip verify source vlan dhcp-snooping port-security** command or shut down the interface (after removing the policy) using the **shutdown** command and reactivate it using the **no shutdown** command. (CSCee44402)

- On a system reload, some of the QoS policies that had previously loaded into the hardware, may fail to load due to limited space.

  Workaround: Disable QoS with the **no qos** command, then reenable QoS with the **qos global** command. (CSCee52449)

- Insertion of unsupported SFPs (small form-factor pluggable optics) into a WS-X4448-GB-SFP or WS-X4448-GB-LX module and can cause undetected communication failures between the supervisor engine and the corresponding module. Subsequent insertion or removal of SFPs from the module is not recognized by the system. This behavior can be observed on a Catalyst 4500 series switch using Release 12.1(12c)EW1 or later.

  Workaround: Reset the module with the **hw-module module reset** command. (CSCee05078)

- When in SML (Smart Missing Link) mode, some converter boxes (CPE devices) send pulses on the optical side when the Ethernet cable is removed. These converter boxes should also have an LT (Link Test) mode in which the optical side stays active regardless of the connection status and an ML (Missing Link) mode in which the optical side always stays shut down if the Ethernet cable is

disconnected. If a WS-X4148-FE-BD-LC port is connected to a converter box in SML mode, and the Ethernet cable on the box is removed, the port will eventually go into errdisable mode because of the continuous connecting and disconnecting flapping of the link.

Workaround: Configure the convertor box (CPE device) to operate in either LT (Link Test) or ML (Missing Link) mode. (CSCed28409)

- A spurious error message appears when an SSH connection disconnects after an idle timeout.

  Workaround: Disable idle timeouts. (CSCec30214)

- When PBR is configured on a Supervisor Engine III or Supervisor Engine IV, hardware-switched PBR packets update the access list or route map statistics improperly.

  Workaround: None. (CSCdz10171)

- A CompactFlash module formatted on either Supervisor Engine III or Supervisor Engine IV that uses Cisco IOS Releases 12.1(14)E, 12.1(19)E, or 12.1(13)EW will not work on Supervisor Engine II-Plus. The CompactFlash module will continue to work on the other supervisor engines.

  Workaround: Format the CompactFlash module on any Catalyst 4500 series switch supervisor engine that uses Release 12.1(19)EW (or later). (CSCeb36355)

Resolved Caveats in Cisco IOS Release 12.2(20)EW

This section lists the resolved caveats in release 12.2(20)EW:

- Cisco Internetwork Operating System (IOS) Software is vulnerable to a Denial of Service (DoS) attack from crafted IPv6 packets when the device has been configured to process IPv6 traffic. This vulnerability requires multiple crafted packets to be sent to the device which may result in a reload upon successful exploitation.

  More details can be found in the security advisory, which is posted at http://www.cisco.com/warp/public/707/cisco-sa-20050126-ipv6.shtml.

  (CSCed40933)

- When 802.1Q and Layer 2 Protocol Tunneling are disabled on a switch, and the switch is rebooted after saving the configuration, spanning-tree BPDU filtering is not disabled automatically on the port.

  Workaround: Manually disable spanning-tree BPDU filtering on the interface with the **no spanning-tree bpdufilter** command. (CSCec88311)

- When DHCP snooping, IP source guard, and trunks are configured on all 240 interfaces on a Catalyst 4500 series switch equipped with a Supervisor Engine II+, the switch may exhaust its TCAM space.

  Workaround: None. (CSCed18765)

- When Layer 3 fragmentation fails, a Catalyst 4500 series switch that uses Supervisor Engine IV sends back the wrong ICMP code and causes the Path MTU auto-discovery feature to fail. The switch returns the code “ICMP Host unreachable / Communication administratively filtered (code 13)," yet the correct code is "ICMP Host unreachable / Fragmentation needed but DF-Bit set (Code 4)."

  Workaround: None. (CSCed56513)

- When you upgrade a Cisco IOS software image from Release 12.1(12c) or 12.1(19)E to a release in the 12.2 release train, the following syslog message appears: "00:00:01: %C4K_IOSSYS-3-BLANKSTARTUPCONFIG: Blank or invalid startup-config, booting up with defaults".

  Workaround: You may ignore the message. (CSCed26025)

- When configured for VRF-Lite, a Catalyst 4500 series switch inadvertently forwards packets received on the VRF interface for those destinations not in the VRF routing table. Instead of dropping the packets, the switch forwards them using the global routing table.

  Workaround: Issue the command **ip route vrf <vrf name> 0.0.0.0 0.0.0.0 null 0** to drop the packet. (CSCed20990)

- The **show mod** command will not display the correct status of a WS-X4604-GWY module if the gateway module has failed. The status of the module incorrectly displays as “Ok,” but the correct status is “Offline.” This problem has been resolved in the Release 12.3(8.3)T image of the WS-X4604-GWY module.

  Workaround: Use SNMP to monitor both the gateway module and the supervisor engine as separate devices. (CSCea90578)

- Ports in suspended mode due to misconfiguration in the LACP port channel do not recover, even after reconfiguring the ports. This situation occurs when most ports are configured for 802.1X encapsulation and one or more ports are not.

  Workaround: Enter the **switchport trunk encap dot1q** command to add the suspended port to the channel, shut down the port using the **shutdown** command, and then enter the **no shutdown** command to force the port to stay active. This action ensures that the port gets added to the port channel. (CSCeb78999)

Open Caveats in Cisco IOS Release 12.2(18)EW7

This section lists the open caveats in Cisco IOS Release 12.2(18)EW7.

- When 802.1Q and Layer 2 Protocol Tunneling are disabled on a switch, and the switch is rebooted after saving the configuration, spanning-tree BPDU filtering is not disabled automatically on the port.

  Workaround: Manually disable spanning-tree BPDU filtering on the interface with the **no spanning-tree bpdufilter** command. (CSCec88311)

- A spurious error message appears when an SSH connection disconnects after an idle timeout.

  Workaround: Disable idle timeouts. (CSCec30214)

- On a Catalyst 4500 series switch with Gigabit Ethernet Switching Modules, link flaps may occur when you pull out TX cables on a giga ethernet interface configured with "speed nonnegotiate.”

  Workaround: Do not set “speed nonnegotiate.” (CSCeg57297)

- Inserting the WS-X4232-RJ-XX and/or WS-X4124-FX-M linecards into a Catalyst 4500 series switch running Cisco IOS Release 12.2(18)EW7 causes the switch to reload continuously.

  This problem is not present in Cisco IOS Release 12.2(25)EWA7.

  Workaround: Remove these linecards or upgrade to Cisco IOS Release 12.2(25)EWA7. (CSCsg43414)

Resolved Caveats in Cisco IOS Release 12.2(18)EW7

This section lists the resolved caveats in release 12.2(18)EW7:

- Some (or all) CDP neighbors are invisible.

  It only happens on releases that include the fix for CSCse85200.

  When turning on "debug cdp even," the following message appears:

  ```
  CDP-EV: Received item (type : 9) with invalid length 4
  ```

  Workaround: None. (CSCsf07847)

Open Caveats in Cisco IOS Release 12.2(18)EW6

This section lists the open caveats in Cisco IOS Release 12.2(18)EW6.

- When 802.1Q and Layer 2 Protocol Tunneling are disabled on a switch, and the switch is rebooted after saving the configuration, spanning-tree BPDU filtering is not disabled automatically on the port.

  Workaround: Manually disable spanning-tree BPDU filtering on the interface with the **no spanning-tree bpdufilter** command. (CSCec88311)

- A spurious error message appears when an SSH connection disconnects after an idle timeout.

  Workaround: Disable idle timeouts. (CSCec30214)

- On a Catalyst 4500 series switch with Gigabit Ethernet Switching Modules, link flaps may occur when you pull out TX cables on a giga ethernet interface configured with "speed nonnegotiate."

  Workaround: Do not set “speed nonnegotiate.” (CSCeg57297)

- Inserting the WS-X4232-RJ-XX and/or WS-X4124-FX-M linecards into a Catalyst 4500 series switch running Cisco IOS Release 12.2(18)EW6 causes the switch to reload continuously.

  This problem is not present in Cisco IOS Release 12.2(25)EWA7.

  Workaround: Remove these linecards or upgrade to Cisco IOS Release 12.2(25)EWA7. (CSCsg43414)

Resolved Caveats in Cisco IOS Release 12.2(18)EW6

This section lists the resolved caveats in release 12.2(18)EW6:

- Through normal software maintenance processes, Cisco is removing deprecated functionality. These changes have no impact on system operation or feature availability. (CSCei76358)

- Cisco IOS may permit arbitrary code execution after exploitation of a heap-based buffer overflow vulnerability. Cisco has included additional integrity checks in its software, as further described below, that are intended to reduce the likelihood of arbitrary code execution.

  Cisco has made free software available that includes the additional integrity checks for affected customers.

  This advisory is posted at http://www.cisco.com/warp/public/707/cisco-sa-20051102-timers.shtml. (CSCei61732)

- If a Catalyst 4500 series switch is configured to receive STP packets, a malformed packet sent to the switch on the local LAN may cause the device to reload.

Workaround: None. (CSCsa96905)

- If ARP Inspection and DHCP Snooping are enabled and MAC ACLs are applied on a Catalyst 4500 series switch, the switch shows high CPU.

  The **show platform health** command shows that the processes holding the CPU are:

  - KxAclPathMan update
  - TagMan-RecreateMtegR
  - K2L2 Address Table R

  Workaround: Remove the MAC ACLs. (CSCsa63528)

- If storm control is configured on an interface and storm control disables the interface, the ARP table does not update its database after you manually perform a link up/down.

  Workaround: Allow storm control to disable and re-enable the interface. (CSCsb49409)

- When a WS-X4148-RJ45V is configured to "auto" (negotiate) and is connected to an Intel Pro 1000 MT NIC card, the link is negotiated to a port speed of 10 and "full" duplex rather than a port speed of 100 and "full" duplex.

  Workaround: None. (CSCsa55172)

- If an RP is also a first hop Router, the first mcast packet is dropped.

  Workaround: Do not use first hop router as an RP or use dense mode. (CSCsc51906)

- When the 15K Sun server is a link partner to WS-X4118 and connected to a blocking port, rebooting the server may cause packets in the input queue of the port to be sent to the supervisor engine as bad packets. If this condition occurs, packets could remain in the input queue even after the port is shutdown. Packets left in the input queue will be forwarded indefinitely to the supervisor engine, causing flooding and high CPU utilization.

  Workarounds:

  1. Reset the line card **hw-module reset**.

  2. Remove and reinsert line card from the chassis.

  (CSCei19499)

- When configuring a monitor session and the learning option is enabled, the learning option is not shown in the stored config, but it shows in the output of the **show monitor** command. The learning option is disabled after reboot.

  Workaround: None. (CSCsb03748)

- A Catalyst 4500 series switch does not forward an 802.1X request with NULL credentials.

  Workaround: None. (CSCej03858)

- If loopguard is enabled on a port, which is participating in spanning tree (and is in BLK state), it may go into loop inconsistent state and stops receiving BPDUs from its neighbor.

  The problem is fixed in Cisco IOS Releases 12.2(18)EW6, 12.2(25)EWA5, and 12.2(31)SG.

  Workarounds:

  1. Issue **shutdown**, then **no shutdown** on the port stuck.

  2. Disable loop guard on the port, then enable it.

  (CSCsc04047)

- A Catalyst 4500 series switch running in pim dense-mode marks the OIL of (*,G) with an "H" flag (hardware switching flag). Ordinarily, switches operating in pim dense-mode should not use (*,G) to forward traffic.

  This situation does not impact (S,G) multicast traffic forwarding.

  Workaround: None. (CSCeh46536)

- After configuring **speed nonnegotiate** in an interface range on a WS-X4306 module on a Catalyst 4500 series switch, Symbol-Err and Sequence-Err counters may increase.

  Workaround: Link up these ports with the **no shut** command. (CSCsc71324)

- When 802.1x accounting is enabled, the Framed-IP-Address[8] attribute is not included in accounting messages generated on ports with **ip dhcp snooping trust** enabled.

  Workaround: None. (CSCsb46019)

- When HF is in pim dense mode, after a Catalyst 4500 series switch boots initially, (s,g) mcast traffic arriving on the switch is not forwarded to the intended destination despite a *,g for that group being present on the system.

  Workaround: Run the **clear ip mroute *** command multiple times. (CSCsb50317)

- If the system MTU is not configured to the default MTU value, the interface MTU cannot return to the default value even if it's cleared by the **no MTU** command in interface mode.

  Workaround: Clear the system MTU first, then clear the interface MTU.

- On a Catalyst 4500 series switch, when igmp-snooping static multicast entries are removed from a forwarding table after shutdown/no shutdown sequence on the port-channel interface on neighbor switch, communication may be lost.

  Workarounds:

  1. Use the **mac-address-table static vlan interface** command rather than the **ip igmp snooping vlan static interface** command.

  2. Use the Cisco IOS Release 12.1E Train.

  (CSCsa78002)

- When the RPF changes while the upstream router is still forwarding mcast packers, the (S,G) uptime doesn't count down but gets refreshed by the mcast packets that the Catalyst 4500 series switch is receiving. This situation does not let the switch send PIM prune messages to the upstream router. It causes unwanted mcast packets to flow across links and makes the link congested.

  If either the RPF interface does not change or it changes when the upstream router has pruned the link towards the downstream router, the prune process happens every 3 mins as expected.

  Workaround: Clear ip mroute for that (S,G). (CSCsa74825)

- If a VLAN assigned to a port via RADIUS by 802.1x does not exist on a switch, the switch may crash. This issue impacts Cisco IOS Releases 12.2(18)EW, 12.2(18)EW1, 12.2(18)EW2, 12.2(18)EW3, 12.2(18)EW4, 12.2(25)EWA and 12.2(25)EWA1.

  Workaround: Do not configure RADIUS to assign VLANs that do not exist. (CSCsb20052)

- Symptoms: The VTP feature in certain versions of Cisco IOS software is vulnerable to a locally-exploitable buffer overflow condition and potential execution of arbitrary code. If a VTP summary advertisement is received with a Type-Length-Value (TLV) containing a VLAN name greater than 100 characters, the receiving switch will reset with an Unassigned Exception error.

  Conditions: The packets must be received on a trunk enabled port, with a matching domain name and a matching VTP domain password (if configured).

Further Information: On the 13th September 2006, Phenoelit Group posted an advisory containing three vulnerabilities:

- VTP Version field DoS
- Integer Wrap in VTP revision
- Buffer Overflow in VTP VLAN name

These vulnerabilities are addressed by Cisco IDs:

- CSCsd52629/CSCsd34759—VTP version field DoS
- CSCse40078/CSCse47765—Integer Wrap in VTP revision
- CSCsd34855/CSCei54611—Buffer Overflow in VTP VLAN name

Cisco's statement and further information are available on the Cisco public website at http://www.cisco.com/warp/public/707/cisco-sr-20060913-vtp.shtml

(CSCei54611)

- Symptoms: The VTP feature in certain versions of Cisco IOS software may be vulnerable to a crafted packet sent from the local network segment which may lead to denial of service condition.

  Conditions: The packets must be received on a trunk enabled port.

  Further Information: On the 13th September 2006, Phenoelit Group posted an advisory containing three vulnerabilities:

  - VTP Version field DoS
  - Integer Wrap in VTP revision
  - Buffer Overflow in VTP VLAN name

  These vulnerabilities are addressed by Cisco IDs:

  - CSCsd52629/CSCsd34759—VTP version field DoS
  - CSCse40078/CSCse47765—Integer Wrap in VTP revision
  - CSCsd34855/CSCei54611—Buffer Overflow in VTP VLAN name

  Cisco's statement and further information are available on the Cisco public website at http://www.cisco.com/warp/public/707/cisco-sr-20060913-vtp.shtml

  (CCSCsd34759)

- Symptoms: A router may crash if it receives a packet with a specific crafted IP option as detailed in Cisco Security Advisory: Crafted IP Option Vulnerability:

  http://www.cisco.com/warp/public/707/cisco-sa-20070124-crafted-ip-option.shtml

  Conditions: This DDTS resolves a symptom of CSCec71950. Cisco IOS with this specific DDTS are not at risk of crash if CSCec71950 has been resolved in the software.

  Workaround: Cisco IOS versions with the fix for CSCec71950 are not at risk for this issue and no workaround is required. If CSCec71950 is not resolved, see the following Cisco Security Advisory: Crafted IP Option Vulnerability for workaround information:

  http://www.cisco.com/warp/public/707/cisco-sa-20070124-crafted-ip-option.shtml

  (CSCek26492)

Open Caveats in Cisco IOS Release 12.2(18)EW5

This section lists the open caveats in Cisco IOS Release 12.2(18)EW5.

- When 802.1Q and Layer 2 Protocol Tunneling are disabled on a switch, and the switch is rebooted after saving the configuration, spanning-tree BPDU filtering is not disabled automatically on the port.

  Workaround: Manually disable spanning-tree BPDU filtering on the interface with the **no spanning-tree bpdufilter** command. (CSCec88311)

- When DHCP snooping, IP source guard, and trunks are configured on all 240 interfaces of a Catalyst 4500 series switch that is equipped with a Supervisor Engine II+, all TCAM space on the switch might be exhausted.

  Workaround: None. (CSCed18765)

- When configured for VRF-Lite, a Catalyst 4500 series switch incorrectly forwards packets received on the VRF interface for those destinations not in the VRF routing table. Instead of dropping the packet, the switch forwards the packet using the global routing table.

  Workaround: Enter the **ip route vrf <vrf name> 0.0.0.0 0.0.0.0 null 0** command. (CSCed20990)

- A spurious error message appears when an SSH connection disconnects after an idle timeout.

  Workaround: Disable idle timeouts. (CSCec30214)

- If power is denied for an interface, the following console message is printed every five seconds:

  %ILPOWER-5-ILPOWER_POWER_DENY: Interface Gi6/29: inline power denied

  Despite this message, the system is functioning properly.

  Workaround: Turn off logging on the console with the **no logging console** command. (CSCed67157)

- Interfaces on the module WS-X4148-RJ45V may not establish a link with a Daiden DN-2800G media converter, when both the switch and the media converter interfaces are configured to operate at 100 Mbps and full duplex. This situation occurs when the interface on the module is configured to automatically detect and power up devices inline with the **power inline auto** command. This caveat is exhibited in all software releases.

  Workarounds:

  1. Disable inline power on the switch ports using the **power inline never** command.

  2. Configure the media converter to autonegotiate the speed and duplex instead of running at 100 Mbps and full duplex. (CSCee62109)

Resolved Caveats in Cisco IOS Release 12.2(18)EW5

This section lists the resolved caveats in release 12.2(18)EW5:

- Through normal software maintenance processes, Cisco is removing deprecated functionality. These changes have no impact on system operation or feature availability. (CSCei76358)

- Cisco IOS may permit arbitrary code execution after exploitation of a heap-based buffer overflow vulnerability. Cisco has included additional integrity checks in its software, as further described below, that are intended to reduce the likelihood of arbitrary code execution.

  Cisco has made free software available that includes the additional integrity checks for affected customers.

This advisory is posted at http://www.cisco.com/warp/public/707/cisco-sa-20051102-timers.shtml. (CSCei61732)

Open Caveats in Cisco IOS Release 12.2(18)EW4

This section lists the open caveats in Cisco IOS Release 12.2(18)EW4.

- When 802.1Q and Layer 2 Protocol Tunneling are disabled on a switch, and the switch is rebooted after saving the configuration, spanning-tree BPDU filtering is not disabled automatically on the port.

  Workaround: Manually disable spanning-tree BPDU filtering on the interface with the **no spanning-tree bpdufilter** command. (CSCec88311)

- When DHCP snooping, IP source guard, and trunks are configured on all 240 interfaces of a Catalyst 4500 series switch that is equipped with a Supervisor Engine II+, all TCAM space on the switch might be exhausted.

  Workaround: None. (CSCed18765)

- When configured for VRF-Lite, a Catalyst 4500 series switch incorrectly forwards packets received on the VRF interface for those destinations not in the VRF routing table. Instead of dropping the packet, the switch forwards the packet using the global routing table.

  Workaround: Enter the **ip route vrf <vrf name> 0.0.0.0 0.0.0.0 null 0** command. (CSCed20990)

- A spurious error message appears when an SSH connection disconnects after an idle timeout.

  Workaround: Disable idle timeouts. (CSCec30214)

- If power is denied for an interface, the following console message is printed every five seconds:

  %ILPOWER-5-ILPOWER_POWER_DENY: Interface Gi6/29: inline power denied

  Despite this message, the system is functioning properly.

  Workaround: Turn off logging on the console with the **no logging console** command. (CSCed67157)

- Interfaces on the module WS-X4148-RJ45V may not establish a link with a Daiden DN-2800G media converter, when both the switch and the media converter interfaces are configured to operate at 100 Mbps and full duplex. This situation occurs when the interface on the module is configured to automatically detect and power up devices inline with the **power inline auto** command. This caveat is exhibited in all software releases.

  Workarounds:

  1. Disable inline power on the switch ports using the **power inline never** command.

  2. Configure the media converter to autonegotiate the speed and duplex instead of running at 100 Mbps and full duplex. (CSCee62109)

Resolved Caveats in Cisco IOS Release 12.2(18)EW4

This section lists the resolved caveats in release 12.2(18)EW4:

- NetFlow Feature Acceleration has been deprecated and removed from Cisco IOS. The global command **ip flow-cache feature-accelerate** will no longer be recognized in any IOS configuration.

  If your router configuration does not currently contain the command **ip flow-cache feature-accelerate**, this change does not affect you.

The removal of NetFlow Feature Acceleration does not affect any other aspects of Netflow operation, for example Access-list processing. The features are separate and distinct.

Cisco Express Forwarding (CEF) supersedes the deprecated NetFlow Feature Acceleration.

Additionally, the following MIB objects and OIDs have been deprecated and removed from the netflow mib (CISCO-NETFLOW-MIB):

```
cnfFeatureAcceleration        1.3.6.1.4.1.9.9.99999.1.3
cnfFeatureAccelerationEnable  1.3.6.1.4.1.9.9.99999.1.3.1
cnfFeatureAvailableSlot       1.3.6.1.4.1.9.9.99999.1.3.2
cnfFeatureActiveSlot          1.3.6.1.4.1.9.9.99999.1.3.3
cnfFeatureTable               1.3.6.1.4.1.9.9.99999.1.3.4
cnfFeatureEntry               1.3.6.1.4.1.9.9.99999.1.3.4.1
cnfFeatureType                1.3.6.1.4.1.9.9.99999.1.3.4.1.1
cnfFeatureSlot                1.3.6.1.4.1.9.9.99999.1.3.4.1.2
cnfFeatureActive              1.3.6.1.4.1.9.9.99999.1.3.4.1.3
cnfFeatureAttaches            1.3.6.1.4.1.9.9.99999.1.3.4.1.4
cnfFeatureDetaches            1.3.6.1.4.1.9.9.99999.1.3.4.1.5
cnfFeatureConfigChanges       1.3.6.1.4.1.9.9.99999.1.3.4.1.6
```

(CSCsa81379)

Open Caveats in Cisco IOS Release 12.2(18)EW3

This section lists the open caveats in Cisco IOS Release 12.2(18)EW3.

- When 802.1Q and Layer 2 Protocol Tunneling are disabled on a switch, and the switch is rebooted after saving the configuration, spanning-tree BPDU filtering is not disabled automatically on the port.

  Workaround: Manually disable spanning-tree BPDU filtering on the interface with the **no spanning-tree bpdufilter** command. (CSCec88311)

- When DHCP snooping, IP source guard, and trunks are configured on all 240 interfaces of a Catalyst 4500 series switch that is equipped with a Supervisor Engine II+, all TCAM space on the switch might be exhausted.

  Workaround: None. (CSCed18765)

- When configured for VRF-Lite, a Catalyst 4500 series switch incorrectly forwards packets received on the VRF interface for those destinations not in the VRF routing table. Instead of dropping the packet, the switch forwards the packet using the global routing table.

  Workaround: Enter the **ip route vrf <vrf name> 0.0.0.0 0.0.0.0 null 0** command. (CSCed20990)

- A spurious error message appears when an SSH connection disconnects after an idle timeout.

  Workaround: Disable idle timeouts. (CSCec30214)

- If power is denied for an interface, the following console message is printed every five seconds:

  %ILPOWER-5-ILPOWER_POWER_DENY: Interface Gi6/29: inline power denied

  Despite this message, the system is functioning properly.

  Workaround: Turn off logging on the console with the **no logging console** command. (CSCed67157)

- Interfaces on the module WS-X4148-RJ45V may not establish a link with a Daiden DN-2800G media converter, when both the switch and the media converter interfaces are configured to operate at 100 Mbps and full duplex. This situation occurs when the interface on the module is configured to automatically detect and power up devices inline with the **power inline auto** command. This caveat is exhibited in all software releases.

  Workarounds:

  1. Disable inline power on the switch ports using the **power inline never** command.

  2. Configure the media converter to autonegotiate the speed and duplex instead of running at 100 Mbps and full duplex. (CSCee62109)

Resolved Caveats in Cisco IOS Release 12.2(18)EW3

This section lists the resolved caveats in release 12.2(18)EW3:

- A document that describes how the Internet Control Message Protocol (ICMP) could be used to perform a number of Denial of Service (DoS) attacks against the Transmission Control Protocol (TCP) has been made publicly available. This document has been published through the Internet Engineering Task Force (IETF) Internet Draft process, and is entitled "ICMP Attacks Against TCP" (draft-gont-tcpm-icmp-attacks-03.txt).

  These attacks, which only affect sessions terminating or originating on a device itself, can be of three types:

  1. Attacks that use ICMP "hard" error messages
  2. Attacks that use ICMP "fragmentation needed and Don't Fragment (DF) bit set" messages, also known as Path Maximum Transmission Unit Discovery (PMTUD) attacks
  3. Attacks that use ICMP "source quench" messages

  Successful attacks may cause connection resets or reduction of throughput in existing connections, depending on the attack type.

  Multiple Cisco products are affected by the attacks described in this Internet draft.

  Cisco has made free software available to address these vulnerabilities. In some cases there are workarounds available to mitigate the effects of the vulnerability.

  This advisory is posted at http://www.cisco.com/warp/public/707/cisco-sa-20050412-icmp.shtml.

  The disclosure of these vulnerabilities is being coordinated by the National Infrastructure Security Coordination Centre (NISCC), based in the United Kingdom. NISCC is working with multiple vendors whose products are potentially affected. Its posting can be found at: http://www.niscc.gov.uk/niscc/docs/re-20050412-00303.pdf?lang=en. (CSCef60659)

- A document that describes how the Internet Control Message Protocol (ICMP) could be used to perform a number of Denial of Service (DoS) attacks against the Transmission Control Protocol (TCP) has been made publicly available. This document has been published through the Internet Engineering Task Force (IETF) Internet Draft process, and is entitled "ICMP Attacks Against TCP" (draft-gont-tcpm-icmp-attacks-03.txt).

  These attacks, which only affect sessions terminating or originating on a device itself, can be of three types:

  1. Attacks that use ICMP "hard" error messages
  2. Attacks that use ICMP "fragmentation needed and Don't Fragment (DF) bit set" messages, also known as Path Maximum Transmission Unit Discovery (PMTUD) attacks
  3. Attacks that use ICMP "source quench" messages

Successful attacks may cause connection resets or reduction of throughput in existing connections, depending on the attack type.

Multiple Cisco products are affected by the attacks described in this Internet draft.

Cisco has made free software available to address these vulnerabilities. In some cases there are workarounds available to mitigate the effects of the vulnerability.

This advisory is posted at http://www.cisco.com/warp/public/707/cisco-sa-20050412-icmp.shtml.

The disclosure of these vulnerabilities is being coordinated by the National Infrastructure Security Coordination Centre (NISCC), based in the United Kingdom. NISCC is working with multiple vendors whose products are potentially affected. Its posting can be found at: http://www.niscc.gov.uk/niscc/docs/re-20050412-00303.pdf?lang=en. (CSCef44699)

- Ports in suspended mode due to misconfiguration in the LACP port channel do not recover, even after reconfiguring the ports. This situation occurs when most ports are configured for dot1q encapsulation and one or more ports are not.

  Workaround: Enter the **switchport trunk encap dot1q** command to add the suspended port to the channel, shut down the port using the **shutdown** command, and then enter the **no shutdown** command to force the port to stay active. This action ensures that the port gets added to the port channel. (CSCeb78999)

- CSCec71950

  Cisco routers and switches running Cisco IOS or Cisco IOS XR software may be vulnerable to a remotely exploitable crafted IP option Denial of Service (DoS) attack. Exploitation of the vulnerability may potentially allow for arbitrary code execution. The vulnerability may be exploited after processing an Internet Control Message Protocol (ICMP) packet, Protocol Independent Multicast version 2 (PIMv2) packet, Pragmatic General Multicast (PGM) packet, or URL Rendezvous Directory (URD) packet containing a specific crafted IP option in the packet's IP header. No other IP protocols are affected by this issue.

  Cisco has made free software available to address this vulnerability for affected customers.

  There are workarounds available to mitigate the effects of the vulnerability.

  This vulnerability was discovered during internal testing. This advisory is available at http://www.cisco.com/warp/public/707/cisco-sa-20070124-crafted-ip-option.shtml

Open Caveats in Cisco IOS Release 12.2(18)EW2

This section lists the open caveats in Cisco IOS Release 12.2(18)EW2.

- When 802.1Q and Layer 2 Protocol Tunneling are disabled on a switch, and the switch is rebooted after saving the configuration, spanning-tree BPDU filtering is not disabled automatically on the port.

  Workaround: Manually disable spanning-tree BPDU filtering on the interface with the **no spanning-tree bpdufilter** command. (CSCec88311)

- When DHCP snooping, IP source guard, and trunks are configured on all 240 interfaces of a Catalyst 4500 series switch that is equipped with a Supervisor Engine II+, all TCAM space on the switch might be exhausted.

  Workaround: None. (CSCed18765)

- When configured for VRF-Lite, a Catalyst 4500 series switch incorrectly forwards packets received on the VRF interface for those destinations not in the VRF routing table. Instead of dropping the packet, the switch forwards the packet using the global routing table.

Workaround: Enter the **ip route vrf <vrf name> 0.0.0.0 0.0.0.0 null 0** command. (CSCed20990)

- Ports in suspended mode due to misconfiguration in the LACP port channel do not recover, even after reconfiguring the ports. This situation occurs when most ports are configured for dot1q encapsulation and one or more ports are not.

  Workaround: Enter the **switchport trunk encap dot1q** command to add the suspended port to the channel, shut down the port using the **shutdown** command, and then enter the **no shutdown** command to force the port to stay active. This action ensures that the port gets added to the port channel. (CSCeb78999)

- A spurious error message appears when an SSH connection disconnects after an idle timeout.

  Workaround: Disable idle timeouts. (CSCec30214)

- If power is denied for an interface, the following console message is printed every five seconds:

  %ILPOWER-5-ILPOWER_POWER_DENY: Interface Gi6/29: inline power denied

  Despite this message, the system is functioning properly.

  Workaround: Turn off logging on the console with the **no logging console** command. (CSCed67157)

- Interfaces on the module WS-X4148-RJ45V may not establish a link with a Daiden DN-2800G media converter, when both the switch and the media converter interfaces are configured to operate at 100 Mbps and full duplex. This situation occurs when the interface on the module is configured to automatically detect and power up devices inline with the **power inline auto** command. This caveat is exhibited in all software releases.

  Workarounds:

  1. Disable inline power on the switch ports using the **power inline never** command.

  2. Configure the media converter to autonegotiate the speed and duplex instead of running at 100 Mbps and full duplex. (CSCee62109)

Resolved Caveats in Cisco IOS Release 12.2(18)EW2

This section lists the resolved caveats in release 12.2(18)EW2:

- A document that describes how the Internet Control Message Protocol (ICMP) could be used to perform a number of Denial of Service (DoS) attacks against the Transmission Control Protocol (TCP) has been made publicly available. This document has been published through the Internet Engineering Task Force (IETF) Internet Draft process, and is entitled “ICMP Attacks Against TCP” (draft-gont-tcpm-icmp-attacks-03.txt).

  These attacks, which only affect sessions terminating or originating on a device itself, can be of three types:

  1. Attacks that use ICMP “hard” error messages
  2. Attacks that use ICMP “fragmentation needed and Don’t Fragment (DF) bit set” messages, also known as Path Maximum Transmission Unit Discovery (PMTUD) attacks
  3. Attacks that use ICMP “source quench” messages

  Successful attacks may cause connection resets or reduction of throughput in existing connections, depending on the attack type.

  Multiple Cisco products are affected by the attacks described in this Internet draft.

  Cisco has made free software available to address these vulnerabilities. In some cases there are workarounds available to mitigate the effects of the vulnerability.

This advisory is posted at http://www.cisco.com/warp/public/707/cisco-sa-20050412-icmp.shtml.

The disclosure of these vulnerabilities is being coordinated by the National Infrastructure Security Coordination Centre (NISCC), based in the United Kingdom. NISCC is working with multiple vendors whose products are potentially affected. Its posting can be found at: http://www.niscc.gov.uk/niscc/docs/re-20050412-00303.pdf?lang=en. (CSCed78149)

- Certain release trains of Cisco Internetwork Operating System (IOS), when configured to use the Cisco IOS Secure Shell (SSH) server in combination with Terminal Access Controller Access Control System Plus (TACACS+) as a means to perform remote management tasks on Cisco IOS devices, may contain two vulnerabilities that can potentially cause Cisco IOS devices to exhaust resources and reload. Repeated exploitation of these vulnerabilities can result in a Denial of Service (DoS) condition. Use of SSH with Remote Authentication Dial In User Service (RADIUS) is not affected by these vulnerabilities.

  Cisco has made free software available to address these vulnerabilities for all affected customers. There are workarounds available to mitigate the effects of the vulnerability (see the "Workarounds" section of the full advisory for details.)
  (CSCed65285)

  This advisory will be posted at
  http://www.cisco.com/warp/public/707/cisco-sa-20050406-ssh.shtml.

- Certain release trains of Cisco Internetwork Operating System (IOS), when configured to use the Cisco IOS Secure Shell (SSH) server in combination with Terminal Access Controller Access Control System Plus (TACACS+) as a means to perform remote management tasks on Cisco IOS devices, may contain two vulnerabilities that can potentially cause Cisco IOS devices to exhaust resources and reload. Repeated exploitation of these vulnerabilities can result in a Denial of Service (DoS) condition. Use of SSH with Remote Authentication Dial In UserService (RADIUS) is not affected by these vulnerabilities.

  Cisco has made free software available to address these vulnerabilities for all affected customers. There are workarounds available to mitigate the effects of the vulnerability (see the "Workarounds" section of the full advisory for details.)
  (CSCed65778)

  This advisory will be posted at
  http://www.cisco.com/warp/public/707/cisco-sa-20050406-ssh.shtml.

- A Cisco device running Cisco IOS and enabled for the Border Gateway Protocol (BGP) is vulnerable to a Denial of Service (DoS) attack from a malformed BGP packet. Only devices with the command 'bgp log-neighbor-changes' configured are vulnerable. The BGP protocol is not enabled by default, and must be configured in order to accept traffic from an explicitly defined peer. Unless the malicious traffic appears to be sourced from a configured, trusted peer, it would be difficult to inject a malformed packet.

  If a misformed packet is received and queued up on the interface, this bug may also be triggered by other means which are not considered remotely exploitable such as the use of the command 'show ip bgp neighbors' or running the command 'debug ip bgp <neighbor> updates' for a configured bgp neighbor.

  Cisco has made free software available to address this problem.

  For more details, please refer to this advisory, available at
  http://www.cisco.com/warp/public/707/cisco-sa-20050126-bgp.shtml

  (CSCee67450)

- Cisco IOS® devices running branches of Cisco IOS version 12.2S that have Dynamic Host Configuration Protocol (DHCP) server or relay agent enabled, even if not configured, are vulnerable to a denial of service where the input queue becomes blocked when receiving specifically crafted

DHCP packets. Cisco is providing free fixed software to address this issue. There are also workarounds to mitigate this vulnerability. This issue was introduced by the fix included in CSCdx46180 and is being tracked by Cisco Bug ID CSCee50294.

This advisory is available at
http://www.cisco.com/warp/public/707/cisco-sa-20041110-dhcp.html

- When in SML (Smart Missing Link) mode, some converter boxes (CPE devices) send pulses on the optical side when the Ethernet cable is removed. These converter boxes should also have an LT (Link Test) mode in which the optical side stays up regardless of the connection status and an ML (Missing Link) mode in which the optical side always stays down if the Ethernet cable is disconnected. If a WS-X4148-FE-BD-LC port is connected to a converter box in SML mode, and the Ethernet cable on the box is removed, the port will eventually go into err-disable mode because of the continuous flapping of the link.

  Workaround: Configure the convertor box (CPE device) to operate in either LT (Link Test) or ML (Missing Link) mode. (CSCed28409)

- When PBR is configured on a Supervisor Engine III or Supervisor Engine IV, hardware-switched PBR packets update the access list or route map statistics improperly.

  Workaround: None. (CSCdz10171)

- A CompactFlash module formatted on either Supervisor Engine III or Supervisor Engine IV running Cisco IOS Releases 12.1(14)E, 12.1(19)E, or 12.1(13)EW will not work on Supervisor Engine II-Plus. The CompactFlash module will continue to work on the other supervisor engines.

  Workaround: Format the CompactFlash module on any Catalyst 4500 series switch supervisor engine running Release 12.1(19)EW (or later). (CSCeb36355)

- For Release 12.2(18)EW or later, when the Gigabit Ethernet port of a Catalyst 3550 switch with inline power (WS-C3550-25-PWR) is connected to the Gigabit Ethernet port of a Catalyst 4500 series switch with a Supervisor Engine V (WS-X4516), the port on the Catalyst 3500 switch fails POST (power-on self test) during startup.

  Workarounds:

  1. Before starting up the Catalyst 3550 switch, disconnect the cable connecting the uplink ports on the Catalyst 3550 switch to the Catalyst 4500 series switch. Once the Catalyst 3550 switch boots, reconnect the cable.

  2. Before starting up the Catalyst 3550 switch, enter the **shutdown** command on the Gigabit Ethernet ports on the Catalyst 4500 series switch. After starting up the Catalyst 3550 switch, enter the **no shutdown** command on the Gigabit Ethernet ports on the Catalyst 4500 switch. (CSCee50578)

Open Caveats in Cisco IOS Release 12.2(18)EW1

This section lists the open caveats in Cisco IOS Release 12.2(18)EW1.

- When 802.1Q and Layer 2 Protocol Tunneling are disabled on a switch, and the switch is rebooted after saving the configuration, spanning-tree BPDU filtering is not disabled automatically on the port.

  Workaround: Manually disable spanning-tree BPDU filtering on the interface with the **no spanning-tree bpdufilter** command. (CSCec88311)

- When DHCP snooping, IP source guard, and trunks are configured on all 240 interfaces of a Catalyst 4500 series switch that is equipped with a Supervisor Engine II+, all TCAM space on the switch might be exhausted.

  Workaround: None. (CSCed18765)

- When configured for VRF-Lite, a Catalyst 4500 series switch incorrectly forwards packets received on the VRF interface for those destinations not in the VRF routing table. Instead of dropping the packet, the switch forwards the packet using the global routing table.

  Workaround: Enter the **ip route vrf <vrf name> 0.0.0.0 0.0.0.0 null 0** command. (CSCed20990)

- Ports in suspended mode due to misconfiguration in the LACP port channel do not recover, even after reconfiguring the ports. This situation occurs when most ports are configured for dot1q encapsulation and one or more ports are not.

  Workaround: Enter the **switchport trunk encap dot1q** command to add the suspended port to the channel, shut down the port using the **shutdown** command, and then enter the **no shutdown** command to force the port to stay active. This action ensures that the port gets added to the port channel. (CSCeb78999)

- When in SML (Smart Missing Link) mode, some converter boxes (CPE devices) send pulses on the optical side when the Ethernet cable is removed. These converter boxes should also have an LT (Link Test) mode in which the optical side stays up regardless of the connection status and an ML (Missing Link) mode in which the optical side always stays down if the Ethernet cable is disconnected. If a WS-X4148-FE-BD-LC port is connected to a converter box in SML mode, and the Ethernet cable on the box is removed, the port will eventually go into err-disable mode because of the continuous flapping of the link.

  Workaround: Configure the convertor box (CPE device) to operate in either LT (Link Test) or ML (Missing Link) mode. (CSCed28409)

- A spurious error message appears when an SSH connection disconnects after an idle timeout.

  Workaround: Disable idle timeouts. (CSCec30214)

- When PBR is configured on a Supervisor Engine III or Supervisor Engine IV, hardware-switched PBR packets update the access list or route map statistics improperly.

  Workaround: None. (CSCdz10171)

- A CompactFlash module formatted on either Supervisor Engine III or Supervisor Engine IV running Cisco IOS Releases 12.1(14)E, 12.1(19)E, or 12.1(13)EW will not work on Supervisor Engine II-Plus. The CompactFlash module will continue to work on the other supervisor engines.

  Workaround: Format the CompactFlash module on any Catalyst 4500 series switch supervisor engine running Release 12.1(19)EW (or later). (CSCeb36355)

- If power is denied for an interface, the following console message is printed every five seconds:

  %ILPOWER-5-ILPOWER_POWER_DENY: Interface Gi6/29: inline power denied

  Despite this message, the system is functioning properly.

  Workaround: Turn off logging on the console with the **no logging console** command. (CSCed67157)

- For Release 12.2(18)EW or later, when the Gigabit Ethernet port of a Catalyst 3550 switch with inline power (WS-C3550-25-PWR) is connected to the Gigabit Ethernet port of a Catalyst 4500 series switch with a Supervisor Engine V (WS-X4516), the port on the Catalyst 3500 switch fails POST (power-on self test) during startup.

Workarounds:

1. Before starting up the Catalyst 3550 switch, disconnect the cable connecting the uplink ports on the Catalyst 3550 switch to the Catalyst 4500 series switch. Once the Catalyst 3550 switch boots, reconnect the cable.

2. Before starting up the Catalyst 3550 switch, enter the **shutdown** command on the Gigabit Ethernet ports on the Catalyst 4500 series switch. After starting up the Catalyst 3550 switch, enter the **no shutdown** command on the Gigabit Ethernet ports on the Catalyst 4500 switch. (CSCee50578)

- Interfaces on the module WS-X4148-RJ45V may not establish a link with a Daiden DN-2800G media converter, when both the switch and the media converter interfaces are configured to operate at 100 Mbps and full duplex. This situation occurs when the interface on the module is configured to automatically detect and power up devices inline with the **power inline auto** command. This caveat is exhibited in all software releases.

  Workarounds:

  1. Disable inline power on the switch ports using the **power inline never** command.

  2. Configure the media converter to autonegotiate the speed and duplex instead of running at 100 Mbps and full duplex. (CSCee62109)

Resolved Caveats in Cisco IOS Release 12.2(18)EW1

This section lists the resolved caveats in release 12.2(18)EW1:

- A Cisco device running Internetwork Operating System (IOS) and enabled for the Open Shortest Path First (OSPF) Protocol is vulnerable to a Denial of Service (DoS) attack from a malformed OSPF packet. The OSPF protocol is not enabled by default.

  The vulnerability is only present in IOS release trains based on 12.0S, 12.2, and 12.3. Releases based on 12.0, 12.1 mainlines and all IOS images prior to 12.0 are not affected. Refer to the Security Advisory for a complete list of affected release trains. (CSCec16481)

  Further details and the workarounds to mitigate the effects are explained in the Security Advisory which is available at the following URL:

  http://www.cisco.com/warp/public/707/cisco-sa-20040818-ospf.shtml.

- When Layer 3 fragmentation fails, a Catalyst 4500 series switch running Supervisor Engine IV sends back the wrong ICMP code and causes the Path MTU auto-discovery feature to fail. The switch returns the code “ICMP Host unreachable / Communication administratively filtered (code 13)," yet the correct code is "ICMP Host unreachable / Fragmentation needed but DF-Bit set (Code 4)."

  Workaround: None. (CSCed56513)

- When you upgrade a Cisco IOS software image from Release 12.1(12c) or 12.1(19)E to a release in the 12.2 release train, the following syslog message appears:

  00:00:01: %C4K_IOSSYS-3-BLANKSTARTUPCONFIG: Blank or invalid startup-config, booting up with defaults

  Workaround: The message is harmless and can be ignored. (CSCed26025)

- The **show mod** command will not display the correct status of a WS-X4604-GWY module if the gateway module has failed. The status of the module incorrectly displays as “Ok,” but the correct status is “Offline.” This problem has been resolved in the Release 12.3(8.3)T image of the WS-X4604-GWY module.

  Workaround: Use SNMP to monitor both the gateway module and the supervisor engine as separate devices. (CSCea90578)

Open Caveats in Cisco IOS Release 12.2(18)EW

This section lists the open caveats in Cisco IOS Release 12.2(18)EW.

- When 802.1Q and Layer 2 Protocol Tunneling are disabled on a switch, and the switch is rebooted after saving the configuration, spanning-tree BPDU filtering is not disabled automatically on the port.

  Workaround: Manually disable spanning-tree BPDU filtering on the interface with the **no spanning-tree bpdufilter** command. (CSCec88311)

- When DHCP snooping, IP source guard, and trunks are configured on all 240 interfaces on a Catalyst 4500 series switch equipped with a Supervisor Engine II+, the switch may exhaust its TCAM space.

  Workaround: None. (CSCed18765)

- When Layer 3 fragmentation fails, a Catalyst 4500 series switch running Supervisor Engine IV sends back the wrong ICMP code and causes the Path MTU auto-discovery feature to fail. The switch returns the code “ICMP Host unreachable / Communication administratively filtered (code 13)," yet the correct code is "ICMP Host unreachable / Fragmentation needed but DF-Bit set (Code 4)."

  Workaround: None. (CSCed56513)

- When configured for VRF-Lite, a Catalyst 4500 series switch inadvertently forwards packets received on the VRF interface for those destinations not in the VRF routing table. Instead of dropping the packet, the switch forwards the packet using the global routing table.

  Workaround: Issue the command **ip route vrf <vrf name> 0.0.0.0 0.0.0.0 null 0**. (CSCed20990)

- Ports in suspended mode due to misconfiguration in the LACP port channel do not recover, even after reconfiguring the ports. This situation occurs when most ports are configured for dot1q encapsulation and one or more ports are not.

  Workaround: Enter the **switchport trunk encap dot1q** command to add the suspended port to the channel, shut down the port using the **shutdown** command, and then enter the **no shutdown** command to force the port to stay active. This action ensures that the port gets added to the port channel. (CSCeb78999)

- When in SML (Smart Missing Link) mode, some converter boxes (CPE devices) send pulses on the optical side when the Ethernet cable is removed. These converter boxes should also have an LT (Link Test) mode in which the optical side stays up regardless of the connection status and an ML (Missing Link) mode in which the optical side always stays down if the Ethernet cable is disconnected. If a WS-X4148-FE-BD-LC port is connected to a converter box in SML mode, and the Ethernet cable on the box is removed, the port will eventually go into err-disable mode because of the continuous flapping of the link.

  Workaround: Configure the convertor box (CPE device) to operate in either LT (Link Test) or ML (Missing Link) mode. (CSCed28409)

- When you upgrade a Cisco IOS software image from Release 12.1(12c) or 12.1(19)E to a release in the 12.2 release train, the following syslog message appears: "00:00:01: %C4K_IOSSYS-3-BLANKSTARTUPCONFIG: Blank or invalid startup-config, booting up with defaults".

  Workaround: Ignore the message. It is harmless. (CSCed26025)

- A spurious error message appears when an SSH connection disconnects after an idle timeout.

  Workaround: Disable idle timeouts. (CSCec30214)

- When PBR is configured on a Supervisor Engine III or Supervisor Engine IV, hardware-switched PBR packets update the access list or route map statistics improperly.

  Workaround: None. (CSCdz10171)

- The **show mod** command will not display the correct status of a WS-X4604-GWY module if the gateway module has crashed. The status of the module incorrectly displays as “Ok,” but the correct status is “Offline.”

  Workaround: Use SNMP to monitor both the gateway module and the supervisor engine as separate devices. (CSCea90578)

- A CompactFlash module formatted on either Supervisor Engine III or Supervisor Engine IV running Cisco IOS Releases 12.1(14)E, 12.1(19)E, or 12.1(13)EW will not work on Supervisor Engine II-Plus. The CompactFlash module will continue to work on the other supervisor engines.

  Workaround: Format the CompactFlash module on any Catalyst 4500 series switch supervisor engine running Release 12.1(19)EW (or later). (CSCeb36355)

Resolved Caveats in Cisco IOS Release 12.2(18)EW

This section lists the resolved caveats in release 12.2(18)EW:

- The packet memory on a Catalyst 4500 series Supervisor Engine may malfunction. If the packet memory malfunctions, the switch sends data packets with an invalid CRC, and the link partner discards them. Once the problem has been identified by the diagnostics that have been added to detect this problem, the switch automatically shuts down and restarts in "best-effort" mode. In this mode, the affected packet buffers are removed from circulation, and log messages are generated every 30 minutes to alert the user to the failures.

  Workaround: Replace the supervisor engine with packet memory errors. This problem is resolved in Cisco IOS Release 12.2(18)EW. (CSCed61591)

- If you delete an SVI interface that is a member of a VRF (using the **no int vlan 2** command), and then you re-create the interface and assign it to a different VRF, the interface might be treated as if it were still in the original VRF. Subsequently, if you deleted the original VRF, the new VRF configuration might overwrite what is on the SVI.

  Workaround: Erase the VRF configuration from an SVI before deleting it. (CSCec47177)

- Occasionally, when unwanted multicast traffic arrives on an interface on which you did not expect to receive it (also termed an RPF failure), the traffic is dropped. This situation can occur when two multicast routers have active PIM-enabled interfaces on the same Ethernet LAN segment. The PIM protocol ensures that only one router is elected to forward traffic to the LAN segment. The non-forwarding router, however, might still have a multicast route for that same multicast flow. If so, the non-forwarding router creates a multicast "fastdrop" entry in the hardware forwarding table

that drops the "RPF failure" packets before they reach the CPU of the non-forwarding router. Normally the **show ip mfib fastdrop** command displays a list of all active fastdrop entries. In some cases the “fastdrop” entry might be displayed.

Workaround: None. However, you can use the **show ip mfib log** command to validate that the RPF failure packets are not forwarded to the CPU. (CSCec45313)

- If a port is in shutdown state, then the **show interfaces** command might report an incorrect media type. The output of the **show interfaces status** command, however, provides the correct type, even if the port is in shutdown state.

  Workaround: None. (CSCec40451)

- If you have enabled jumbo frames or baby giants, and the switch routes packets destined to a router port (as configured with the **no switchport** command on a WS-X4418-GB or WS-X4412-2GB-T module), the switch might reload when it tries to fragment these packets.

  Workaround: Either disable the jumbo frames or baby giants feature, or remove the WS-X4418-GB or WS-X4412-2GB-T module from the chassis. (CSCec56212)

- When at least 2000 VLAN interfaces are configured in a startup-configuration file, a switch might take at least 10 minutes to boot up. During this time, the switch is unresponsive.

  Workaround: Configure fewer SVIs in the startup configuration file. (CSCdx91258)

- If a switchport in loop-inconsistent mode is sending BPDUs and is elected the “designated root” on the segment, the switch will not be able to recover from loop-inconsistent mode.

  Workaround: Disable and then re-enable the switchport. (CSCeb06811)

Open Caveats in Cisco IOS Release 12.1(20)EW4

This section lists the open caveats in Cisco IOS Release 12.1(20)EW4.

- For Cisco IOS Release 12.1(20)EW, in certain scenarios that entail LACP port channels, misconfigured ports do not recover, even after the configuration is fixed. For example, this behavior is observed when you have configured encapsulation on all ports with the **switchport trunk encap dot1q** command. Encapsulation is not configured on the misconfigured port, and the port remains in suspended state, even after the command is re-issued.

  Workaround: Repair the misconfiguration, and then issue a **shutdown** command, followed by a **no shutdown** command. (CSCec57894)

- If you delete an SVI interface that is a member of a VRF (using the **no int vlan 2** command), and then you re-create the interface and assign it to a different VRF, the interface might be treated as if it were still in the original VRF. Subsequently, if you deleted the original VRF, the new VRF configuration might overwrite what is on the SVI.

  Workaround: Erase the VRF configuration from an SVI before deleting it. (CSCec47177)

- Occasionally, when unwanted multicast traffic arrives on an interface on which you did not expect to receive it (also termed an RPF failure), the traffic is dropped. This situation can occur when two multicast routers have active PIM-enabled interfaces on the same Ethernet LAN segment. The PIM protocol ensures that only one router is elected to forward traffic to the LAN segment. The non-forwarding router, however, might still have a multicast route for that same multicast flow. If so, the non-forwarding router creates a multicast "fastdrop" entry in the hardware forwarding table that drops the "RPF failure" packets before they reach the CPU of the non-forwarding router. Normally the **show ip mfib fastdrop** command displays a list of all active fastdrop entries. In some cases the “fastdrop” entry might be displayed.

Workaround: None. However, you can use the **show ip mfib log** command to validate that the RPF failure packets are not forwarded to the CPU. (CSCec45313)

- Occasionally, Enabling auto QoS for the first time might cause the switch to reload.

  Workaround: Issue the **show auto qos interface** command, and then apply all displayed commands manually. (CSCec43783)

- If a port is in shutdown state, then the **show interfaces** command might report an incorrect media type. The output of the **show interfaces status** command, however, provides the correct type, even if the port is in shutdown state.

  Workaround: None. (CSCec40451)

- A spurious error message is appears when the SSH connection disconnects after the IDLE timeout.

  Workaround: Disable IDLE timeouts. (CSCec30214)

- If you have enabled jumbo frames or baby giants, and the switch routes packets destined to a router port (as configured with the **no switchport** command on a WS-X4418-GB or WS-X4412-2GB-T module), the switch might reload when it tries to fragment these packets.

  Workaround: Either disable the jumbo frames or baby giants feature, or remove the WS-X4418-GB or WS-X4412-2GB-T module from the chassis. (CSCec56212)

- When PBR is configured on a Catalyst 4500 Series Switch Supervisor Engine III or IV, hardware-switched PBR packets update the access list or route map statistics improperly.

  Workaround: None. (CSCdz10171)

- When at least 2000 VLAN interfaces are configured in a startup-configuration file, a switch might take at least 10 minutes to boot up. During this time, the switch is unresponsive.

  Workaround: Configure fewer SVIs in the startup configuration file. (CSCdx91258)

- The **show mod** command will not reflect the correct status of a WS-X4604-GWY module if the gateway module has crashed. The status of the module is displayed as “Ok,” but the status should be “Offline.”

  Workaround: Use SNMP to monitor both the gateway module and the supervisor engine as separate devices. (CSCea90578)

- A CompactFlash module formatted on either Supervisor Engine III or IV running Cisco IOS Releases 12.1(14)E, 12.1(19)E, or 12.1(13)EW will not work on Supervisor Engine II-Plus. The CompactFlash module will continue to work on other supervisor engines.

  Workaround: Format the CompactFlash module on any Catalyst 4500 series supervisor engine running Release 12.1(19)EW (or later). (CSCeb36355)

- If a switchport in loop-inconsistent mode is sending BPDUs and is elected the “designated root” on the segment, the switch will not be able to recover from loop-inconsistent mode.

  Workaround: Disable and then re-enable the switchport. (CSCeb06811)

Resolved Caveats in Cisco IOS Release 12.1(20)EW4

This section lists the resolved caveats in release 12.1(20)EW4:

- Through normal software maintenance processes, Cisco is removing deprecated functionality. These changes have no impact on system operation or feature availability. (CSCei76358)

- Cisco IOS may permit arbitrary code execution after exploitation of a heap-based buffer overflow vulnerability. Cisco has included additional integrity checks in its software, as further described below, that are intended to reduce the likelihood of arbitrary code execution.

  Cisco has made free software available that includes the additional integrity checks for affected customers.

  This advisory is posted at http://www.cisco.com/warp/public/707/cisco-sa-20051102-timers.shtml. (CSCei61732)

Open Caveats in Cisco IOS Release 12.1(20)EW3

This section lists the open caveats in Cisco IOS Release 12.1(20)EW3.

- For Cisco IOS Release 12.1(20)EW, in certain scenarios that entail LACP port channels, misconfigured ports do not recover, even after the configuration is fixed. For example, this behavior is observed when you have configured encapsulation on all ports with the **switchport trunk encap dot1q** command. Encapsulation is not configured on the misconfigured port, and the port remains in suspended state, even after the command is re-issued.

  Workaround: Repair the misconfiguration, and then issue a **shutdown** command, followed by a **no shutdown** command. (CSCec57894)

- If you delete an SVI interface that is a member of a VRF (using the **no int vlan 2** command), and then you re-create the interface and assign it to a different VRF, the interface might be treated as if it were still in the original VRF. Subsequently, if you deleted the original VRF, the new VRF configuration might overwrite what is on the SVI.

  Workaround: Erase the VRF configuration from an SVI before deleting it. (CSCec47177)

- Occasionally, when unwanted multicast traffic arrives on an interface on which you did not expect to receive it (also termed an RPF failure), the traffic is dropped. This situation can occur when two multicast routers have active PIM-enabled interfaces on the same Ethernet LAN segment. The PIM protocol ensures that only one router is elected to forward traffic to the LAN segment. The non-forwarding router, however, might still have a multicast route for that same multicast flow. If so, the non-forwarding router creates a multicast "fastdrop" entry in the hardware forwarding table that drops the "RPF failure" packets before they reach the CPU of the non-forwarding router. Normally the **show ip mfib fastdrop** command displays a list of all active fastdrop entries. In some cases the “fastdrop” entry might be displayed.

  Workaround: None. However, you can use the **show ip mfib log** command to validate that the RPF failure packets are not forwarded to the CPU. (CSCec45313)

- Occasionally, Enabling auto QoS for the first time might cause the switch to reload.

  Workaround: Issue the **show auto qos interface** command, and then apply all displayed commands manually. (CSCec43783)

- If a port is in shutdown state, then the **show interfaces** command might report an incorrect media type. The output of the **show interfaces status** command, however, provides the correct type, even if the port is in shutdown state.

  Workaround: None. (CSCec40451)

- A spurious error message is appears when the SSH connection disconnects after the IDLE timeout.

  Workaround: Disable IDLE timeouts. (CSCec30214)

- If you have enabled jumbo frames or baby giants, and the switch routes packets destined to a router port (as configured with the **no switchport** command on a WS-X4418-GB or WS-X4412-2GB-T module), the switch might reload when it tries to fragment these packets.

  Workaround: Either disable the jumbo frames or baby giants feature, or remove the WS-X4418-GB or WS-X4412-2GB-T module from the chassis. (CSCec56212)

- When PBR is configured on a Catalyst 4500 Series Switch Supervisor Engine III or IV, hardware-switched PBR packets update the access list or route map statistics improperly.

  Workaround: None. (CSCdz10171)

- When at least 2000 VLAN interfaces are configured in a startup-configuration file, a switch might take at least 10 minutes to boot up. During this time, the switch is unresponsive.

  Workaround: Configure fewer SVIs in the startup configuration file. (CSCdx91258)

- The **show mod** command will not reflect the correct status of a WS-X4604-GWY module if the gateway module has crashed. The status of the module is displayed as "Ok," but the status should be "Offline."

  Workaround: Use SNMP to monitor both the gateway module and the supervisor engine as separate devices. (CSCea90578)

- A CompactFlash module formatted on either Supervisor Engine III or IV running Cisco IOS Releases 12.1(14)E, 12.1(19)E, or 12.1(13)EW will not work on Supervisor Engine II-Plus. The CompactFlash module will continue to work on other supervisor engines.

  Workaround: Format the CompactFlash module on any Catalyst 4500 series supervisor engine running Release 12.1(19)EW (or later). (CSCeb36355)

- If a switchport in loop-inconsistent mode is sending BPDUs and is elected the "designated root" on the segment, the switch will not be able to recover from loop-inconsistent mode.

  Workaround: Disable and then re-enable the switchport. (CSCeb06811)

Resolved Caveats in Cisco IOS Release 12.1(20)EW3

This section lists the resolved caveats in release 12.1(20)EW3:

- NetFlow Feature Acceleration has been deprecated and removed from Cisco IOS. The global command **ip flow-cache feature-accelerate** will no longer be recognized in any IOS configuration.

  If your router configuration does not currently contain the command **ip flow-cache feature-accelerate**, this change does not affect you.

  The removal of NetFlow Feature Acceleration does not affect any other aspects of Netflow operation, for example Access-list processing. The features are separate and distinct.

  Cisco Express Forwarding (CEF) supercedes the deprecated NetFlow Feature Acceleration.

  Additionally, the following MIB objects and OIDs have been deprecated and removed from the netflow mib (CISCO-NETFLOW-MIB):

```
cnfFeatureAcceleration        1.3.6.1.4.1.9.9.99999.1.3
cnfFeatureAccelerationEnable  1.3.6.1.4.1.9.9.99999.1.3.1
cnfFeatureAvailableSlot       1.3.6.1.4.1.9.9.99999.1.3.2
cnfFeatureActiveSlot          1.3.6.1.4.1.9.9.99999.1.3.3
cnfFeatureTable               1.3.6.1.4.1.9.9.99999.1.3.4
cnfFeatureEntry               1.3.6.1.4.1.9.9.99999.1.3.4.1
cnfFeatureType                1.3.6.1.4.1.9.9.99999.1.3.4.1.1
cnfFeatureSlot                1.3.6.1.4.1.9.9.99999.1.3.4.1.2
```

```
cnfFeatureActive              1.3.6.1.4.1.9.9.99999.1.3.4.1.3
cnfFeatureAttaches            1.3.6.1.4.1.9.9.99999.1.3.4.1.4
cnfFeatureDetaches            1.3.6.1.4.1.9.9.99999.1.3.4.1.5
cnfFeatureConfigChanges       1.3.6.1.4.1.9.9.99999.1.3.4.1.6
```

(CSCsa81379)

Open Caveats in Cisco IOS Release 12.1(20)EW1

This section lists the open caveats in Cisco IOS Release 12.1(20)EW1.

- For Cisco IOS Release 12.1(20)EW, in certain scenarios that entail LACP port channels, misconfigured ports do not recover, even after the configuration is fixed. For example, this behavior is observed when you have configured encapsulation on all ports with the **switchport trunk encap dot1q** command. Encapsulation is not configured on the misconfigured port, and the port remains in suspended state, even after the command is re-issued.

  Workaround: Repair the misconfiguration, and then issue a **shutdown** command, followed by a **no shutdown** command. (CSCec57894)

- If you delete an SVI interface that is a member of a VRF (using the **no int vlan 2** command), and then you re-create the interface and assign it to a different VRF, the interface might be treated as if it were still in the original VRF. Subsequently, if you deleted the original VRF, the new VRF configuration might overwrite what is on the SVI.

  Workaround: Erase the VRF configuration from an SVI before deleting it. (CSCec47177)

- Occasionally, when unwanted multicast traffic arrives on an interface on which you did not expect to receive it (also termed an RPF failure), the traffic is dropped. This situation can occur when two multicast routers have active PIM-enabled interfaces on the same Ethernet LAN segment. The PIM protocol ensures that only one router is elected to forward traffic to the LAN segment. The non-forwarding router, however, might still have a multicast route for that same multicast flow. If so, the non-forwarding router creates a multicast "fastdrop" entry in the hardware forwarding table that drops the "RPF failure" packets before they reach the CPU of the non-forwarding router. Normally the **show ip mfib fastdrop** command displays a list of all active fastdrop entries. In some cases the “fastdrop” entry might be displayed.

  Workaround: None. However, you can use the **show ip mfib log** command to validate that the RPF failure packets are not forwarded to the CPU. (CSCec45313)

- Occasionally, Enabling auto QoS for the first time might cause the switch to reload.

  Workaround: Issue the **show auto qos interface** command, and then apply all displayed commands manually. (CSCec43783)

- If a port is in shutdown state, then the **show interfaces** command might report an incorrect media type. The output of the **show interfaces status** command, however, provides the correct type, even if the port is in shutdown state.

  Workaround: None. (CSCec40451)

- A spurious error message is appears when the SSH connection disconnects after the IDLE timeout.

  Workaround: Disable IDLE timeouts. (CSCec30214)

- If you have enabled jumbo frames or baby giants, and the switch routes packets destined to a router port (as configured with the **no switchport** command on a WS-X4418-GB or WS-X4412-2GB-T module), the switch might reload when it tries to fragment these packets.

  Workaround: Either disable the jumbo frames or baby giants feature, or remove the WS-X4418-GB or WS-X4412-2GB-T module from the chassis. (CSCec56212)

- When PBR is configured on a Catalyst 4500 Series Switch Supervisor Engine III or IV, hardware-switched PBR packets update the access list or route map statistics improperly.

  Workaround: None. (CSCdz10171)

- When at least 2000 VLAN interfaces are configured in a startup-configuration file, a switch might take at least 10 minutes to boot up. During this time, the switch is unresponsive.

  Workaround: Configure fewer SVIs in the startup configuration file. (CSCdx91258)

- The **show mod** command will not reflect the correct status of a WS-X4604-GWY module if the gateway module has crashed. The status of the module is displayed as "Ok," but the status should be "Offline."

  Workaround: Use SNMP to monitor both the gateway module and the supervisor engine as separate devices. (CSCea90578)

- A CompactFlash module formatted on either Supervisor Engine III or IV running Cisco IOS Releases 12.1(14)E, 12.1(19)E, or 12.1(13)EW will not work on Supervisor Engine II-Plus. The CompactFlash module will continue to work on other supervisor engines.

  Workaround: Format the CompactFlash module on any Catalyst 4500 series supervisor engine running Release 12.1(19)EW (or later). (CSCeb36355)

- If a switchport in loop-inconsistent mode is sending BPDUs and is elected the "designated root" on the segment, the switch will not be able to recover from loop-inconsistent mode.

  Workaround: Disable and then re-enable the switchport. (CSCeb06811)

Resolved Caveats in Cisco IOS Release 12.1(20)EW1

This section lists the resolved caveats in release 12.1(20)EW1:

- Cisco IOS Release 12.1(20)EW1 includes changes that make the Catalyst 4006 and Catalyst 4500 Series chassis 802.3af-ready.

Open Caveats in Cisco IOS Release 12.1(20)EW

This section lists the open caveats in Release 12.1(20)EW.

- For Cisco IOS Release 12.1(20)EW, in certain scenarios that entail LACP port channels, misconfigured ports do not recover, even after the configuration is fixed. For example, this behavior is observed when you have configured encapsulation on all ports with the **switchport trunk encap dot1q** command. Encapsulation is not configured on the misconfigured port, and the port remains in suspended state, even after the command is re-issued.

  Workaround: Repair the misconfiguration, and then issue a **shutdown** command, followed by a **no shutdown** command. (CSCec57894)

- If you delete an SVI interface that is a member of a VRF (using the **no int vlan 2** command), and then re-create the interface and assigned it to a different VRF, it might be treated as if it were still in the original VRF. Subsequently, if you deleted the original VRF, the new VRF configuration might overwrite what is on the SVI.

  Workaround: Erase the VRF configuration from an SVI before deleting it. (CSCec47177)

- Occasionally, when unwanted multicast traffic arrives on an interface on which you did not expect to receive it (also termed an RPF failure), the traffic is dropped. This situation can occur when two multicast routers have active PIM-enabled interfaces on the same Ethernet LAN segment. The PIM

protocol ensures that only one router is elected to forward traffic to the LAN segment. The non-forwarding router, however, might still have a multicast route for that same multicast flow. If so, the non-forwarding router creates a multicast "fastdrop" entry in the hardware forwarding table that drops the "RPF failure" packets before they reach the CPU of the non-forwarding router. Normally the **show ip mfib fastdrop** command displays a list of all active fastdrop entries. In some cases the “fastdrop” entry might be displayed.

Workaround: None. However, you can use the **show ip mfib log** command to validate that the RPF failure packets are not forwarded to the CPU. (CSCec45313)

- Occasionally, when you enable auto QoS for the first time, you might cause the switch to reload.

  Workaround: Issue the command **show auto qos interface**, and then apply all the displayed commands manually. (CSCec43783)

- If a port is in shutdown state, then the **show interfaces** command might report an incorrect media type. The output of the **show interfaces status** command, however, provides the correct type, even if the port is in shutdown state.

  Workaround: None. (CSCec40451)

- A spurious error message is printed when the SSH connection disconnects after the IDLE timeout.

  Workaround: Disable IDLE timeouts. (CSCec30214)

- If you have enabled jumbo frames or baby giants, and the switch routes packets destined to a router port (as configured with **no switchport** on a WS-X4418-GB or WS-X4412-2GB-T module), the switch might reload when it tries to fragment these packets.

  Workaround: Either disable the jumbo frames or baby giants feature, or remove the WS-X4418-GB or WS-X4412-2GB-T module from the chassis. (CSCec56212)

- When PBR is configured on a Catalyst 4500 Supervisor Engine III or IV, hardware-switched PBR packets update the access list or route map statistics improperly.

  Workaround: None. (CSCdz10171)

- When at least 2000 VLAN interfaces are configured in a startup-configuration file, a switch might take at least 10 minutes to boot up. During this time, the switch is unresponsive.

  Workaround: Configure fewer SVIs in the startup configuration file. (CSCdx91258)

- The **show mod** command will not reflect the correct status of a WS-X4604-GWY module if the gateway module has crashed. The status of the module is displayed as “Ok”; the status should be “Offline.”

  Workaround: Use SNMP to monitor both the gateway module and the supervisor engine as separate devices. (CSCea90578)

- A CompactFlash card formatted on either Supervisor Engine III or IV running Cisco IOS Releases 12.1(14)E, 12.1(19)E, or 12.1(13)EW will not work on Supervisor Engine II-Plus. The CompactFlash card will continue to work on other supervisor engines.

  Workaround: Format the CompactFlash card on any Catalyst 4500 series supervisor engine running 12.1(19)EW (or later).

- If a switchport in loop-inconsistent mode is sending BPDUs and is elected the “designated root” on the segment, it will not be able to recover from loop-inconsistent mode.

  Workaround: Disable and then re-enable the switchport. (CSCeb06811)

Resolved Caveats in Cisco IOS Release 12.1(20)EW

This section lists the resolved caveats in Release 12.1(20)EW:

- When a PortFast-enabled port assumes the forwarding state, it is added to the multicast flood set and starts receiving all unknown multicast traffic. This situation occurs only if the port was previously down and is now up, and IGMP snooping is enabled on that VLAN.

  Workaround: Disable the PortFast feature on the port. (CSCeb33852)

- You cannot update the calendar with the **calendar set** command.

  Workaround: Set the system clock with the **clock set** command, but update the calendar with the **clock update-calendar** command. (CSCea10436)

- Cisco IOS Release 12.1(19)EW can have 10/100 autonegotiation interoperability problems on a WS-X4148-RJ45V (Network Interface Card) that uses the Realtec RTL8139A Chipset.

  Workaround: Turn autonegotiation off. (CSCea18531)

Open Caveats in Cisco IOS Release 12.1(19)EW3

This section lists the open caveats in Release 12.1(19)EW3.

- When PBR is configured on a Catalyst 4500 Supervisor Engine III or IV, hardware-switched PBR packets update the access list or route map statistics improperly.

  Workaround: None. (CSCdz10171)

- When at least 2000 VLAN interfaces are configured in a startup-configuration file, a switch might take at least 10 minutes to boot up. During this time, the switch is unresponsive.

  Workaround: Configure fewer SVIs in the startup configuration file. (CSCdx91258)

- The **show mod** command will not reflect the correct status of a WS-X4604-GWY module, if the gateway module has crashed. The status of the module is displayed as “Ok”; the status should be “Offline”.

  Workaround: Use SNMP to monitor both the gateway module and the supervisor engine as separate devices. (CSCea90578)

- When a PortFast-enabled port assumes the forwarding state, it is added to the multicast flood set and starts receiving all unknown multicast traffic. This situation occurs only if the port was previously down and is now up, and IGMP snooping is enabled on that VLAN.

  Workaround: Disable the PortFast feature on the port. (CSCeb33852)

- You cannot update the calendar with the **calendar set** command.

  Workaround: Set the system clock with the **clock set** command, but update the calendar with the **clock update-calendar** command. (CSCea10436)

- A CompactFlash card formatted on either Supervisor Engine III or IV running 12.1E or 12.1(13)EW will not work on Supervisor Engine II-Plus. The CompactFlash card will continue to work on other supervisor engines.

  Workaround: Format the CompactFlash card on any Catalyst 4500 series supervisor engine running 12.1(19)EW.

- If a switchport in loop-inconsistent mode is sending BPDUs and is elected the “designated root” on the segment, it will not be able to recover from loop-inconsistent mode.

  Workaround: Disable and then reenable the switchport. (CSCeb06811)

- Release 12.1(19)EW can have 10/100 autonegotiation interoperability problems on a WS-X4148-RJ45V (Network Interface Card) that uses the Realtec RTL8139A Chipset.

  Workaround: Turn autonegotiation off. (CSCea18531)

- The **interface range** command is incompatible with the **no ip igmp snooping tcn flood** command.

  Workaround: Apply the CLI directly on the interface. (CSCeb33811)

Resolved Caveats in Cisco IOS Release 12.1(19)EW3

This section lists the resolved caveats in Release 12.1(19)EW3:

- Through normal software maintenance processes, Cisco is removing deprecated functionality. These changes have no impact on system operation or feature availability. (CSCei76358)
- Cisco IOS may permit arbitrary code execution after exploitation of a heap-based buffer overflow vulnerability. Cisco has included additional integrity checks in its software, as further described below, that are intended to reduce the likelihood of arbitrary code execution.

  Cisco has made free software available that includes the additional integrity checks for affected customers.

  This advisory is posted at http://www.cisco.com/warp/public/707/cisco-sa-20051102-timers.shtml. (CSCei61732)

Open Caveats in Cisco IOS Release 12.1(19)EW2

This section lists the open caveats in Release 12.1(19)EW2.

- When PBR is configured on a Catalyst 4500 Supervisor Engine III or IV, hardware-switched PBR packets update the access list or route map statistics improperly.

  Workaround: None. (CSCdz10171)

- When at least 2000 VLAN interfaces are configured in a startup-configuration file, a switch might take at least 10 minutes to boot up. During this time, the switch is unresponsive.

  Workaround: Configure fewer SVIs in the startup configuration file. (CSCdx91258)

- The **show mod** command will not reflect the correct status of a WS-X4604-GWY module, if the gateway module has crashed. The status of the module is displayed as “Ok”; the status should be “Offline”.

  Workaround: Use SNMP to monitor both the gateway module and the supervisor engine as separate devices. (CSCea90578)

- When a PortFast-enabled port assumes the forwarding state, it is added to the multicast flood set and starts receiving all unknown multicast traffic. This situation occurs only if the port was previously down and is now up, and IGMP snooping is enabled on that VLAN.

  Workaround: Disable the PortFast feature on the port. (CSCeb33852)

- You cannot update the calendar with the **calendar set** command.

  Workaround: Set the system clock with the **clock set** command, but update the calendar with the **clock update-calendar** command. (CSCea10436)

- A CompactFlash card formatted on either Supervisor Engine III or IV running 12.1E or 12.1(13)EW will not work on Supervisor Engine II-Plus. The CompactFlash card will continue to work on other supervisor engines.

Workaround: Format the CompactFlash card on any Catalyst 4500 series supervisor engine running 12.1(19)EW.

- If a switchport in loop-inconsistent mode is sending BPDUs and is elected the “designated root” on the segment, it will not be able to recover from loop-inconsistent mode.

  Workaround: Disable and then reenable the switchport. (CSCeb06811)

- Release 12.1(19)EW can have 10/100 autonegotiation interoperability problems on a WS-X4148-RJ45V (Network Interface Card) that uses the Realtec RTL8139A Chipset.

  Workaround: Turn autonegotiation off. (CSCea18531)

- The **interface range** command is incompatible with the **no ip igmp snooping tcn flood** command.

  Workaround: Apply the CLI directly on the interface. (CSCeb33811)

Resolved Caveats in Cisco IOS Release 12.1(19)EW2

This section lists the resolved caveats in Release 12.1(19)EW2:

- NetFlow Feature Acceleration has been deprecated and removed from Cisco IOS. The global command **ip flow-cache feature-accelerate** will no longer be recognized in any IOS configuration.

  If your router configuration does not currently contain the command **ip flow-cache feature-accelerate**, this change does not affect you.

  The removal of NetFlow Feature Acceleration does not affect any other aspects of Netflow operation, for example Access-list processing. The features are separate and distinct.

  Cisco Express Forwarding (CEF) supercedes the deprecated NetFlow Feature Acceleration.

  Additionally, the following MIB objects and OIDs have been deprecated and removed from the netflow mib (CISCO-NETFLOW-MIB):

```
cnfFeatureAcceleration        1.3.6.1.4.1.9.9.99999.1.3
cnfFeatureAccelerationEnable  1.3.6.1.4.1.9.9.99999.1.3.1
cnfFeatureAvailableSlot       1.3.6.1.4.1.9.9.99999.1.3.2
cnfFeatureActiveSlot          1.3.6.1.4.1.9.9.99999.1.3.3
cnfFeatureTable               1.3.6.1.4.1.9.9.99999.1.3.4
cnfFeatureEntry               1.3.6.1.4.1.9.9.99999.1.3.4.1
cnfFeatureType                1.3.6.1.4.1.9.9.99999.1.3.4.1.1
cnfFeatureSlot                1.3.6.1.4.1.9.9.99999.1.3.4.1.2
```

Open Caveats in Cisco IOS Release 12.1(19)EW1

This section lists the open caveats in Release 12.1(19)EW1.

- When PBR is configured on a Catalyst 4500 Supervisor Engine III or IV, hardware-switched PBR packets update the access list or route map statistics improperly.

  Workaround: None. (CSCdz10171)

- When at least 2000 VLAN interfaces are configured in a startup-configuration file, a switch might take at least 10 minutes to boot up. During this time, the switch is unresponsive.

  Workaround: Configure fewer SVIs in the startup configuration file. (CSCdx91258)

- The **show mod** command will not reflect the correct status of a WS-X4604-GWY module, if the gateway module has crashed. The status of the module is displayed as “Ok”; the status should be “Offline”.

  Workaround: Use SNMP to monitor both the gateway module and the supervisor engine as separate devices. (CSCea90578)

- When a PortFast-enabled port assumes the forwarding state, it is added to the multicast flood set and starts receiving all unknown multicast traffic. This situation occurs only if the port was previously down and is now up, and IGMP snooping is enabled on that VLAN.

  Workaround: Disable the PortFast feature on the port. (CSCeb33852)

- You cannot update the calendar with the **calendar set** command.

  Workaround: Set the system clock with the **clock set** command, but update the calendar with the **clock update-calendar** command. (CSCea10436)

- A CompactFlash card formatted on either Supervisor Engine III or IV running 12.1E or 12.1(13)EW will not work on Supervisor Engine II-Plus. The CompactFlash card will continue to work on other supervisor engines.

  Workaround: Format the CompactFlash card on any Catalyst 4500 series supervisor engine running 12.1(19)EW.

- If a switchport in loop-inconsistent mode is sending BPDUs and is elected the “designated root” on the segment, it will not be able to recover from loop-inconsistent mode.

  Workaround: Disable and then reenable the switchport. (CSCeb06811)

- Release 12.1(19)EW can have 10/100 autonegotiation interoperability problems on a WS-X4148-RJ45V (Network Interface Card) that uses the Realtec RTL8139A Chipset.

  Workaround: Turn autonegotiation off. (CSCea18531)

- The **interface range** command is incompatible with the **no ip igmp snooping tcn flood** command.

  Workaround: Apply the CLI directly on the interface. (CSCeb33811)

Resolved Caveats in Cisco IOS Release 12.1(19)EW1

This section lists the resolved caveats in Release 12.1(19)EW1:

- When the ports on a WS-X4448-GB-LX module are connected and the link is up, the online diagnostics loopback test fails during bootup and the failed ports are marked as faulty.

  If all the ports on a stub are connected during bootup, the loopback test indicates a stub failure and the ports will neither come up nor switch traffic.

  Workaround: Do one of the following:

  - Unplug the fiber or SFPs from the ports on the module before bootup and reconnect them after the module is online.
  - Disable the link partner for all connected ports on the module before bootup and reenable the link partner after the module is online. (CSCeb59072)

- The **show interface flowcontrol** command will crash the switch if a portchannel has been created and then deleted previously.

  Workaround: None. (CSCeb61931)

- IGMPv3 leaves are not being forwarded to the multicast router ports, which impacts bandwidth by delaying the pruning of traffic from the router to the host. The result is unwanted multicast traffic between the router and the switch, which remains longer than necessary. The problem is corrected when the router "ages out" the interface from the group, which usually occurs on the router's next IGMP general query.

  When multiple group records are present in an IGMPv3 membership report and the last record is a leave, the entire membership report will not be sent to the multicast router ports. This behavior might cause you to lose a v3 join.

  Workaround: None. (CSCeb60069)

- If one of two collocated hosts has sent an IGMP leave for the group, the ports on the other host might experience multicast disconnection for up to 5 seconds.

  Workaround: None. (CSCeb45371)

- When you enable DHCP snooping and configure a static MAC drop entry for a router or DHCP client, the switch might shut down.

  Workaround: When DHCP snooping is enabled, do not configure a static MAC drop entry, such as the following:

  ```
  mac-address-table static 00aa.00bb.00cc vlan 100 drop
  ```
  aa.bb.cc is a MAC address for either a router or a DHCP client. (CSCeb62361)

- If you have previously configured an access port with static MAC address (for example, through port security) and now you attempt to enable an IP Source Guard MAC filter, the switch may reload.

  Workaround: Either enable IP Source Guard with IP filter only, or ensure that there is no static MAC address entry configured on the port. (CSCeb74573)

- With a URT-based dynamic VLAN assignment for VMPs, a supervisor engine running 12.1(19)EW may reset.

  Workaround: None. (CSCeb62034)

Open Caveats in Cisco IOS Release 12.1(19)EW

This section lists the open caveats in Release 12.1(19)EW.

- When the ports on a WS-X4448-GB-LX module are connected and the link is up, the online diagnostics loopback test fails during bootup and the failed ports are marked as faulty.

  If all the ports on a stub are connected during bootup, the loopback test indicates a stub failure and the ports will neither come up nor switch traffic.

  Workaround: Do one of the following:

  - Unplug the fiber or SFPs from the ports on the module before bootup and reconnect them after the module is online.
  - Disable the link partner for all connected ports on the module before bootup and reenable the link partner after the module is online. (CSCeb59072)

- The **show interface flowcontrol** command will crash the switch if a portchannel has been created and then deleted previously.

  Workaround: None. (CSCeb61931)

- IGMPv3 leaves are not being forwarded to the multicast router ports, which impacts bandwidth by delaying the pruning of traffic from the router to the host. The result is unwanted multicast traffic between the router and the switch, which remains longer than necessary. The problem is corrected when the router "ages out" the interface from the group, which usually occurs on the router's next IGMP general query.

  When multiple group records are present in an IGMPv3 membership report and the last record is a leave, the entire membership report will not be sent to the multicast router ports. This behavior might cause you to lose a v3 join.

  Workaround: None. (CSCeb60069)

- If one of two collocated hosts has sent an IGMP leave for the group, the ports on the other host might experience multicast disconnection for up to 5 seconds.

  Workaround: None. (CSCeb45371)

- When you enable DHCP snooping and configure a static MAC drop entry for a router or DHCP client, the switch might shut down.

  Workaround: When DHCP snooping is enabled, do not configure a static MAC drop entry, such as the following:

  ```
  mac-address-table static 00aa.00bb.00cc vlan 100 drop
  ```

  aa.bb.cc is a MAC address for either a router or a DHCP client. (CSCeb62361)

- If you have previously configured an access port with static MAC address (for example, through port security) and now you attempt to enable an IP Source Guard MAC filter, the switch may reload.

  Workaround: Either enable IP Source Guard with IP filter only, or ensure that there is no static MAC address entry configured on the port. (CSCeb74573)

- With a URT-based dynamic VLAN assignment for VMPs, a supervisor engine running 12.1(19)EW may reset.

  Workaround: None. (CSCeb62034)

- When PBR is configured on a Catalyst 4500 Supervisor Engine III or IV, hardware-switched PBR packets update the access list or route map statistics improperly.

  Workaround: None. (CSCdz10171)

- When at least 2000 VLAN interfaces are configured in a startup-configuration file, a switch might take at least 10 minutes to boot up. During this time, the switch is unresponsive.

  Workaround: Configure fewer SVIs in the startup configuration file. (CSCdx91258)

- The **show mod** command will not reflect the correct status of a WS-X4604-GWY module, if the gateway module has crashed. The status of the module is displayed as "Ok"; the status should be "Offline."

  Workaround: Use SNMP to monitor both the gateway module and the supervisor engine as separate devices. (CSCea90578)

- When a PortFast-enabled port assumes the forwarding state, it is added to the multicast flood set and starts receiving all unknown multicast traffic. This situation occurs only if the port was previously down and is now up, and IGMP snooping is enabled on that VLAN.

  Workaround: Disable the PortFast feature on the port. (CSCeb33852)

- You cannot update the calendar with the **calendar set** command.

  Workaround: Set the system clock with the **clock set** command, but update the calendar with the **clock update-calendar** command. (CSCea10436)

- A CompactFlash card formatted on either Supervisor Engine III or IV running 12.1E or 12.1(13)EW will not work on Supervisor Engine II-Plus. The CompactFlash card will continue to work on other supervisor engines.

  Workaround: Format the CompactFlash card on any Catalyst 4500 series supervisor engine running 12.1(19)EW.

- If a switchport in loop-inconsistent mode is sending BPDUs and is elected the "designated root" on the segment, it will not be able to recover from loop-inconsistent mode.

  Workaround: Disable and then reenable the switchport. (CSCeb06811)

- Release 12.1(19)EW can have 10/100 autonegotiation interoperability problems on a WS-X4148-RJ45V (Network Interface Card) that uses the Realtec RTL8139A Chipset.

  Workaround: Turn autonegotiation off. (CSCea18531)

- The **interface range** command is incompatible with the **no ip igmp snooping tcn flood** command.

  Workaround: Apply the CLI directly on the interface. (CSCeb33811)

Resolved Caveats in Cisco IOS Release 12.1(19)EW

This section lists the resolved caveats in Release 12.1(19)EW:

- A Cisco device running IOS and enabled for the Border Gateway Protocol (BGP) is vulnerable to a Denial of Service (DOS) attack from a malformed BGP packet. The BGP protocol is not enabled by default, and must be configured in order to accept traffic from an explicitly defined peer. Unless the malicious traffic appears to be sourced from a configured, trusted peer, it would be difficult to inject a malformed packet. BGP MD5 is a valid workaround for this problem.

  Cisco has made free software available to address this problem. For more details, please refer to this advisory, available at http://www.cisco.com/warp/public/707/cisco-sa-20040616-bgp.shtml. (CSCdu53656 and CSCea28131)

- Catalyst 4500 IOS supervisor engines exhibit slow IPX routing performance (high latency).

  Workaround: None. (CSCea85204)

- When oversubscribed traffic destined for queue 4 is dropped in queue 4, the dynamic buffer limiting (DBL) drop counters for queue 2 (seen when you enter the **show int <int> counter** command) are incremented. When oversubscribed traffic destined for queue 2 is dropped in queue 2, the DBL drop counters for queue 4 are incremented.

  Queues 1 and 3 perform correctly.

  Workaround: None. (CSCdz58560)

- When IGMP Snooping is enabled and the last member leaves a multicast group, the switch will send an IGMP leave message with the source IP address of 0.0.0.0.

  Workaround: None. (CSCdz49171)

- When a fan tray fails or is removed, the supervisor engine status may not register as faulty and the status LED may not turn amber. The status LED also may not turn red when the power supply fails or is removed.

  Workaround: None. (CSCdz55274)

- When a nonblocking gigaport is configured as “unidirectional receive-only” and as “speed nonegotiation,” the port link may not come up after both CLIs are unconfigured.

  Workaround: Do one of the following:

  – Avoid configuring both unidirectional receive-only and speed nonegotiation on the same port, because the former places a port in speed nonegotiation mode.

  – Enter the **shut** and **no shut** commands to reset the port’s link partner and bring up the port’s link. (CSCdz53781)

- When the fan tray is removed from the switch for more than 5 minutes, the following message is displayed on the console and all line cards are reset:

  ```
  %C4K_CHASSIS-2-INSUFFICIENTFANSDETECTED: Too few working fans, the chassis will
  overheat
  ```

  Workaround: None. (CSCdz50817)

- When a Catalyst 4500 Supervisor Engine III or IV is configured to use PBR, and the route map specifies that the action is a default next-hop, that action is taken only if the ARP resolution for the specified host has already taken place. If the ARP resolution has not taken place, the system does not consider the host to be a valid default next-hop.

  Workaround: Ping the specified host to ensure that it is always in the ARP table. (CSCdz50786)

- If none of a port channel’s ports support jumbo frames, your attempt to change the MTU on the port channel will change the port channels MTU, but not the member ports MTU. None of the member ports are suspended.

  If some of the member ports support jumbo frames, this situation does not happen and the ports that do not support jumbo frames are suspended.

  Workaround: Do not change the port channel's MTU if none of its member ports support jumbo frames. (CSCdz43350)

- When the WS-X4148-RJ45V card is plugged into a Catalyst 4500 chassis, the power on LED does not operate. This caveat is present in 12.1(13)EW and all previous software releases.

  Workaround: None. (CSCdz60995)

- Disabling IGMP snooping with a large number of groups and VLANs might cause CPU HOG and HOST FLAPPING. If so, you will see messages similar to the following on the console:

  ```
  %SYS-3-CPUHOG: Task ran for 8692 msec (0/0), process = Exec, PC = 128790.
  %C4K_EBM-4-HOSTFLAPPING: Host 00:10:0B:10:B9:20 in vlan 200 is flapping between port
  Po2 and port Po1
  ```

  Workaround: None. (CSCdy21031)

- When the spanning tree mode is PVST, isolated trunk ports transmit BPDUs with the primary VLAN instead of the secondary VLAN.

  Workaround: Use the **spanning-tree bpduguard enable** interface command to enable BPDU Guard to detect any BPDUs received on private VLAN trunk ports. (CSCdx62226)

- When a secondary VLAN is disabled using the **shutdown** VLAN configuration command and reenabled using the **no shutdown** VLAN configuration command, any subsequent flooded or multicast packets received on the private VLAN port does not reach all the destinations.

  Workaround: Do not use the **shutdown** and **no shutdown** VLAN configuration command to disable the VLAN. Delete and recreate the secondary VLAN with the proper VLAN type and association configuration. (CSCdy22082)

- When a VLAN filter is applied to filter IP traffic based on Layer 4 information, fragmented packets might not be filtered correctly. Only the initial fragment has all the Layer 4 information. Noninitial fragments do not have any Layer 4 information (for example, UDP ports and the TCP flag).

  Workaround: If IP packets can be fragmented in your network, program ACLs in the VLAN map, without any Layer 4 information. (CSCdx84696)

- If an ACL is applied to more than one interface, and any Access Control Entry (ACE) in the ACL is subsequently modified, then the Ternary Content Addressable Memory (TCAM) usage of that ACL is multiplied by the number of interfaces to which the ACL is applied.

  Workaround: Detach the ACL from one interface at a time (without deleting the ACL), and then reattach the ACL to that interface. (CSCdw28603)

Open Caveats in Cisco IOS Release 12.1(13)EW4

This section lists the open caveats in Release 12.1(13)EW4.

- When oversubscribed traffic destined for queue 4 is dropped in queue 4, the DBL drop counters for queue 2 (seen when the **show int <int> counter** command is issued) are incremented. When oversubscribed traffic destined for queue 2 is dropped in queue 2, the DBL drop counters for queue 4 are incremented.

  Queues 1 and 3 perform correctly.

  Workaround: None. (CSCdz58560)

- When IGMP Snooping is enabled and the last member leaves a multicast group, the switch will send an IGMP leave message with the source IP address of 0.0.0.0.

  Workaround: None. (CSCdz49171)

- Supervisor engine status may not register as faulty and the status LED may not turn amber when a fan-tray fails or is removed. Moreover, the status LED may not go turn red when the power supply fails or is removed.

  Workaround: None. (CSCdz55274)

- When a non-blocking gigaport is configured as “unidirectional receive-only” as well as “speed nonegotiation,” once both CLIs are unconfigured, the port link may not come up.

  Workaround: Do one of the following:

  – Avoid configuring both unidirectional receive-only and speed nonegotiation on the same port, because the former places a port in speed nonegotiation mode.

  – Issue **shut** and **no shut** commands to reset the port’s link partner and bring up the port's link. (CSCdz53781)

- When the fan tray is removed from the switch for more than 5 minutes, the following message is displayed on the console and all line cards are reset:

  ```
  %C4K_CHASSIS-2-INSUFFICIENTFANSDETECTED: Too few working fans, the chassis will
  overheat
  ```

  Workaround: None. (CSCdz50817)

- When a Catalyst 4000 Supervisor Engine III or IV is configured to use PBR, and the route-map specifies that the action is a default next-hop, that action is taken only if the ARP resolution for the specified host has already taken place. If the ARP resolution has not taken place, the system does not consider the host to be a valid default next-hop.

  Workaround: Ping the specified host to ensure that it is always in the ARP table. (CSCdz50786)

- If none of a port-channel's ports support Jumbo Frame, your attempt to change the MTU on the port-channel will change the port-channel's MTU, but not the member ports' MTU. Moreover, none of the member ports are suspended.

  In contrast, if some of the member ports support jumbo frames, this scenario does not happen and the ports that do not support jumbo frames are suspended.

  Workaround: Do not change the port-channel's MTU if none of its member ports support jumbo frames. (CSCdz43350)

- When PBR is configured on a Catalyst 4000 Supervisor Engine III or IV, PBR packets switched by hardware update the access-list or route-map statistics improperly.

  Workaround: None. (CSCdz10171)

- When the WS-X4148-RJ45V card is plugged into a Catalyst 4500 chassis, the power LED "on" does not work. This caveat is present in 12.1(13)EW and all previous software releases.

  Workaround: None. (CSCdz60995)

- With at least 2000 VLAN interfaces configured in the startup-config file, a switch might take at least 10 minutes to boot up. During this time, the switch is unresponsive.

  Workaround: Configure fewer SVIs in the startup config file. (CSCdx91258)

- Disabling IGMP snooping with a large number of groups and VLANs might cause CPU HOG and HOST FLAPPING. If so, you will see messages like the following on the console:

  ```
  %SYS-3-CPUHOG: Task ran for 8692 msec (0/0), process = Exec, PC = 128790.
  %C4K_EBM-4-HOSTFLAPPING: Host 00:10:0B:10:B9:20 in vlan 200 is flapping between port
  Po2 and port Po1
  ```

  Workaround: None. (CSCdy21031)

- When the spanning tree mode is PVST, isolated trunk ports transmit BPDUs with the primary VLAN instead of the secondary VLAN.

  Workaround: Use the **spanning-tree bpduguard enable** interface command to enable BPDU Guard to detect any BPDUs received on private VLAN trunk ports. (CSCdx62226)

- When a secondary VLAN is disabled using the **shutdown** VLAN configuration command and re-enabled using the **no shutdown** VLAN configuration command, any subsequent flooded/multicast packets received on the private VLAN port does not reach all the destinations.

  Workaround: Do not use the **shutdown** and **no shutdown** VLAN configuration command to disable the VLAN. Instead, delete and recreate the secondary VLAN with the proper VLAN type and association configuration. (CSCdy22082)

- When a VLAN filter is applied to filter IP traffic based on Layer 4 information, fragmented packets might not be filtered correctly. Only the initial fragment has all the Layer 4 information. Non-initial fragments do not have any Layer 4 information (e.g., UDP ports, TCP flag, etc.).

  Workaround: If IP packets can be fragmented in your network, program ACLs in the VLAN Map, without any Layer 4 information. (CSCdx84696)

- If an ACL is applied to more than one interface, and any Access Control Entry (ACE) in the ACL is subsequently modified, then the Ternary Content Addressable Memory (TCAM) usage of that ACL is multiplied by the number of interfaces to which the ACL is applied.

  Workaround: Detach the ACL from one interface at a time (without deleting the ACL), and then reattach the ACL to that interface. (CSCdw28603)

Resolved Caveats in Cisco IOS Release 12.1(13)EW4

This section lists the resolved caveats in Release 12.1(13)EW4.

- Through normal software maintenance processes, Cisco is removing deprecated functionality. These changes have no impact on system operation or feature availability. (CSCei76358)
- Cisco IOS may permit arbitrary code execution after exploitation of a heap-based buffer overflow vulnerability. Cisco has included additional integrity checks in its software, as further described below, that are intended to reduce the likelihood of arbitrary code execution.

  Cisco has made free software available that includes the additional integrity checks for affected customers.

  This advisory is posted at http://www.cisco.com/warp/public/707/cisco-sa-20051102-timers.shtml. (CSCei61732)

Open Caveats in Cisco IOS Release 12.1(13)EW3

This section lists the open caveats in Release 12.1(13)EW3.

- When oversubscribed traffic destined for queue 4 is dropped in queue 4, the DBL drop counters for queue 2 (seen when the **show int <int> counter** command is issued) are incremented. When oversubscribed traffic destined for queue 2 is dropped in queue 2, the DBL drop counters for queue 4 are incremented.

  Queues 1 and 3 perform correctly.

  Workaround: None. (CSCdz58560)
- When IGMP Snooping is enabled and the last member leaves a multicast group, the switch will send an IGMP leave message with the source IP address of 0.0.0.0.

  Workaround: None. (CSCdz49171)
- Supervisor engine status may not register as faulty and the status LED may not turn amber when a fan-tray fails or is removed. Moreover, the status LED may not go turn red when the power supply fails or is removed.

  Workaround: None. (CSCdz55274)
- When a non-blocking gigaport is configured as “unidirectional receive-only” as well as “speed nonegotiation,” once both CLIs are unconfigured, the port link may not come up.

  Workaround: Do one of the following:

  – Avoid configuring both unidirectional receive-only and speed nonegotiation on the same port, because the former places a port in speed nonegotiation mode.

  – Issue **shut** and **no shut** commands to reset the port’s link partner and bring up the port's link. (CSCdz53781)
- When the fan tray is removed from the switch for more than 5 minutes, the following message is displayed on the console and all line cards are reset:

  ```
  %C4K_CHASSIS-2-INSUFFICIENTFANSDETECTED: Too few working fans, the chassis will
  overheat
  ```

  Workaround: None. (CSCdz50817)

- When a Catalyst 4000 Supervisor Engine III or IV is configured to use PBR, and the route-map specifies that the action is a default next-hop, that action is taken only if the ARP resolution for the specified host has already taken place. If the ARP resolution has not taken place, the system does not consider the host to be a valid default next-hop.

  Workaround: Ping the specified host to ensure that it is always in the ARP table. (CSCdz50786)

- If none of a port-channel's ports support Jumbo Frame, your attempt to change the MTU on the port-channel will change the port-channel's MTU, but not the member ports' MTU. Moreover, none of the member ports are suspended.

  In contrast, if some of the member ports support jumbo frames, this scenario does not happen and the ports that do not support jumbo frames are suspended.

  Workaround: Do not change the port-channel's MTU if none of its member ports support jumbo frames. (CSCdz43350)

- When PBR is configured on a Catalyst 4000 Supervisor Engine III or IV, PBR packets switched by hardware update the access-list or route-map statistics improperly.

  Workaround: None. (CSCdz10171)

- When the WS-X4148-RJ45V card is plugged into a Catalyst 4500 chassis, the power LED "on" does not work. This caveat is present in 12.1(13)EW and all previous software releases.

  Workaround: None. (CSCdz60995)

- With at least 2000 VLAN interfaces configured in the startup-config file, a switch might take at least 10 minutes to boot up. During this time, the switch is unresponsive.

  Workaround: Configure fewer SVIs in the startup config file. (CSCdx91258)

- Disabling IGMP snooping with a large number of groups and VLANs might cause CPU HOG and HOST FLAPPING. If so, you will see messages like the following on the console:

  ```
  %SYS-3-CPUHOG: Task ran for 8692 msec (0/0), process = Exec, PC = 128790.
  %C4K_EBM-4-HOSTFLAPPING: Host 00:10:0B:10:B9:20 in vlan 200 is flapping between port
  Po2 and port Po1
  ```

  Workaround: None. (CSCdy21031)

- When the spanning tree mode is PVST, isolated trunk ports transmit BPDUs with the primary VLAN instead of the secondary VLAN.

  Workaround: Use the **spanning-tree bpduguard enable** interface command to enable BPDU Guard to detect any BPDUs received on private VLAN trunk ports. (CSCdx62226)

- When a secondary VLAN is disabled using the **shutdown** VLAN configuration command and re-enabled using the **no shutdown** VLAN configuration command, any subsequent flooded/multicast packets received on the private VLAN port does not reach all the destinations.

  Workaround: Do not use the **shutdown** and **no shutdown** VLAN configuration command to disable the VLAN. Instead, delete and recreate the secondary VLAN with the proper VLAN type and association configuration. (CSCdy22082)

- When a VLAN filter is applied to filter IP traffic based on Layer 4 information, fragmented packets might not be filtered correctly. Only the initial fragment has all the Layer 4 information. Non-initial fragments do not have any Layer 4 information (e.g., UDP ports, TCP flag, etc.).

  Workaround: If IP packets can be fragmented in your network, program ACLs in the VLAN Map, without any Layer 4 information. (CSCdx84696)

- If an ACL is applied to more than one interface, and any Access Control Entry (ACE) in the ACL is subsequently modified, then the Ternary Content Addressable Memory (TCAM) usage of that ACL is multiplied by the number of interfaces to which the ACL is applied.

  Workaround: Detach the ACL from one interface at a time (without deleting the ACL), and then reattach the ACL to that interface. (CSCdw28603)

Resolved Caveats in Cisco IOS Release 12.1(13)EW3

This section lists the resolved caveats in Release 12.1(13)EW3.

- NetFlow Feature Acceleration has been deprecated and removed from Cisco IOS. The global command **ip flow-cache feature-accelerate** will no longer be recognized in any IOS configuration.

  If your router configuration does not currently contain the command **ip flow-cache feature-accelerate**, this change does not affect you.

  The removal of NetFlow Feature Acceleration does not affect any other aspects of Netflow operation, for example Access-list processing. The features are separate and distinct.

  Cisco Express Forwarding (CEF) supercedes the deprecated NetFlow Feature Acceleration.

  Additionally, the following MIB objects and OIDs have been deprecated and removed from the netflow mib (CISCO-NETFLOW-MIB):

```
cnfFeatureAcceleration        1.3.6.1.4.1.9.9.99999.1.3
cnfFeatureAccelerationEnable  1.3.6.1.4.1.9.9.99999.1.3.1
cnfFeatureAvailableSlot       1.3.6.1.4.1.9.9.99999.1.3.2
cnfFeatureActiveSlot          1.3.6.1.4.1.9.9.99999.1.3.3
cnfFeatureTable               1.3.6.1.4.1.9.9.99999.1.3.4
cnfFeatureEntry               1.3.6.1.4.1.9.9.99999.1.3.4.1
cnfFeatureType                1.3.6.1.4.1.9.9.99999.1.3.4.1.1
cnfFeatureSlot                1.3.6.1.4.1.9.9.99999.1.3.4.1.2
cnfFeatureActive              1.3.6.1.4.1.9.9.99999.1.3.4.1.3
cnfFeatureAttaches            1.3.6.1.4.1.9.9.99999.1.3.4.1.4
cnfFeatureDetaches            1.3.6.1.4.1.9.9.99999.1.3.4.1.5
cnfFeatureConfigChanges       1.3.6.1.4.1.9.9.99999.1.3.4.1.6
```

  (CSCsa81379)

Open Caveats in Cisco IOS Release 12.1(13)EW2

This section lists the open caveats in Release 12.1(13)EW2.

- When oversubscribed traffic destined for queue 4 is dropped in queue 4, the DBL drop counters for queue 2 (seen when the **show int <int> counter** command is issued) are incremented. When oversubscribed traffic destined for queue 2 is dropped in queue 2, the DBL drop counters for queue 4 are incremented.

  Queues 1 and 3 perform correctly.

  Workaround: None. (CSCdz58560)

- When IGMP Snooping is enabled and the last member leaves a multicast group, the switch will send an IGMP leave message with the source IP address of 0.0.0.0.

  Workaround: None. (CSCdz49171)

- Supervisor engine status may not register as faulty and the status LED may not turn amber when a fan-tray fails or is removed. Moreover, the status LED may not go turn red when the power supply fails or is removed.

  Workaround: None. (CSCdz55274)

- When a non-blocking gigaport is configured as “unidirectional receive-only” as well as “speed nonegotiation,” once both CLIs are unconfigured, the port link may not come up.

  Workaround: Do one of the following:

  – Avoid configuring both unidirectional receive-only and speed nonegotiation on the same port, because the former places a port in speed nonegotiation mode.

  – Issue **shut** and **no shut** commands to reset the port’s link partner and bring up the port's link. (CSCdz53781)

- When the fan tray is removed from the switch for more than 5 minutes, the following message is displayed on the console and all line cards are reset:

  ```
  %C4K_CHASSIS-2-INSUFFICIENTFANSDETECTED: Too few working fans, the chassis will
  overheat
  ```

  Workaround: None. (CSCdz50817)

- When a Catalyst 4000 Supervisor Engine III or IV is configured to use PBR, and the route-map specifies that the action is a default next-hop, that action is taken only if the ARP resolution for the specified host has already taken place. If the ARP resolution has not taken place, the system does not consider the host to be a valid default next-hop.

  Workaround: Ping the specified host to ensure that it is always in the ARP table. (CSCdz50786)

- If none of a port-channel’s ports support Jumbo Frame, your attempt to change the MTU on the port-channel will change the port-channel's MTU, but not the member ports' MTU. Moreover, none of the member ports are suspended.

  In contrast, if some of the member ports support jumbo frames, this scenario does not happen and the ports that do not support jumbo frames are suspended.

  Workaround: Do not change the port-channel's MTU if none of its member ports support jumbo frames. (CSCdz43350)

- When PBR is configured on a Catalyst 4000 Supervisor Engine III or IV, PBR packets switched by hardware update the access-list or route-map statistics improperly.

  Workaround: None. (CSCdz10171)

- When the WS-X4148-RJ45V card is plugged into a Catalyst 4500 chassis, the power LED “on” does not work. This caveat is present in 12.1(13)EW and all previous software releases.

  Workaround: None. (CSCdz60995)

- With at least 2000 VLAN interfaces configured in the startup-config file, a switch might take at least 10 minutes to boot up. During this time, the switch is unresponsive.

  Workaround: Configure fewer SVIs in the startup config file. (CSCdx91258)

- Disabling IGMP snooping with a large number of groups and VLANs might cause CPU HOG and HOST FLAPPING. If so, you will see messages like the following on the console:

  ```
  %SYS-3-CPUHOG: Task ran for 8692 msec (0/0), process = Exec, PC = 128790.
  %C4K_EBM-4-HOSTFLAPPING: Host 00:10:0B:10:B9:20 in vlan 200 is flapping between port
  Po2 and port Po1
  ```

  Workaround: None. (CSCdy21031)

- When the spanning tree mode is PVST, isolated trunk ports transmit BPDUs with the primary VLAN instead of the secondary VLAN.

  Workaround: Use the **spanning-tree bpduguard enable** interface command to enable BPDU Guard to detect any BPDUs received on private VLAN trunk ports. (CSCdx62226)

- When a secondary VLAN is disabled using the **shutdown** VLAN configuration command and re-enabled using the **no shutdown** VLAN configuration command, any subsequent flooded/multicast packets received on the private VLAN port does not reach all the destinations.

  Workaround: Do not use the **shutdown** and **no shutdown** VLAN configuration command to disable the VLAN. Instead, delete and recreate the secondary VLAN with the proper VLAN type and association configuration. (CSCdy22082)

- When a VLAN filter is applied to filter IP traffic based on Layer 4 information, fragmented packets might not be filtered correctly. Only the initial fragment has all the Layer 4 information. Non-initial fragments do not have any Layer 4 information (e.g., UDP ports, TCP flag, etc.).

  Workaround: If IP packets can be fragmented in your network, program ACLs in the VLAN Map, without any Layer 4 information. (CSCdx84696)

- If an ACL is applied to more than one interface, and any Access Control Entry (ACE) in the ACL is subsequently modified, then the Ternary Content Addressable Memory (TCAM) usage of that ACL is multiplied by the number of interfaces to which the ACL is applied.

  Workaround: Detach the ACL from one interface at a time (without deleting the ACL), and then reattach the ACL to that interface. (CSCdw28603)

Resolved Caveats in Cisco IOS Release 12.1(13)EW2

This section lists the resolved caveats in Release 12.1(13)EW2.

- Cisco routers and switches running Cisco IOS software and configured to process Internet Protocol version 4 (IPv4) packets are vulnerable to a Denial of Service (DoS) attack. A rare sequence of crafted IPv4 packets sent directly to the device may cause the input interface to stop processing traffic once the input queue is full. No authentication is required to process the inbound packet. Processing of IPv4 packets is enabled by default. Devices running only IP version 6 (IPv6) are not affected. A workaround is available.

  Workaround: Cisco has made software available, free of charge, to correct the problem. (CSCdz71127)

  This advisory is available at

  http://www.cisco.com/warp/public/707/cisco-sa-20030717-blocked.shtml

- Under certain conditions, a caveat in the power on self test (POST) may erroneously indicate that good WS-X4014 and WS-X4515 supervisor engines are faulty. When this happens, modules do not come online and the switch cannot be used to forward traffic.

  If the POST incorrectly identifies a good supervisor engine as faulty because of this situation, the POST output will only display the first port on the switch as faulty:

```
Port Traffic: L2 Serdes Loopback ...
0: F  1: .  2: .  3: .  4: .  5: .  6: .  7: .  8: .  9: . 10: . 11: .
12: . 13: . 14: . 15: . 16: . 17: . 18: . 19: . 20: . 21: . 22: . 23: .
24: . 25: . 26: . 27: . 28: . 29: . 30: . 31: .
```

  If the POST fails, but the test output does not match the display shown here, your hardware probably is faulty.

This POST behavior is a software issue and has been resolved in 12.1(12c)EW2, 12.1(13)EW2, 12.1(19)EW, and 12.1(20)E images.

Workaround: None. (CSCeb59442)

Open Caveats in Cisco IOS Release 12.1(13)EW1

This section lists the open caveats in Release 12.1(13)EW1.

- Cisco routers and switches running Cisco IOS software and configured to process Internet Protocol version 4 (IPv4) packets are vulnerable to a Denial of Service (DoS) attack. A rare sequence of crafted IPv4 packets sent directly to the device may cause the input interface to stop processing traffic once the input queue is full. No authentication is required to process the inbound packet. Processing of IPv4 packets is enabled by default. Devices running only IP version 6 (IPv6) are not affected. A workaround is available.

  Workaround: Cisco has made software available, free of charge, to correct the problem. (CSCdz71127)

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  If the POST incorrectly identifies a good supervisor engine as faulty because of this situation, the POST output will only display the first port on the switch as faulty:

  ```
  Port Traffic: L2 Serdes Loopback ...
  0: F  1: .  2: .  3: .  4: .  5: .  6: .  7: .  8: .  9: . 10: . 11: .
  12: . 13: . 14: . 15: . 16: . 17: . 18: . 19: . 20: . 21: . 22: . 23: .
  24: . 25: . 26: . 27: . 28: . 29: . 30: . 31: .
  ```

  If the POST fails, but the test output does not match the display shown here, your hardware probably is faulty.

  This POST behavior is a software issue and has been resolved in 12.1(12c)EW2, 12.1(13)EW2, 12.1(19)EW, and 12.1(20)E images.

  Workaround: None. (CSCeb59442)

- When oversubscribed traffic destined for queue 4 is dropped in queue 4, the DBL drop counters for queue 2 (seen when the **show int <int> counter** command is issued) are incremented. When oversubscribed traffic destined for queue 2 is dropped in queue 2, the DBL drop counters for queue 4 are incremented.

  Queues 1 and 3 perform correctly.

  Workaround: None. (CSCdz58560)

- When IGMP Snooping is enabled and the last member leaves a multicast group, the switch will send an IGMP leave message with the source IP address of 0.0.0.0.

  Workaround: None. (CSCdz49171)

- Supervisor engine status may not register as faulty and the status LED may not turn amber when a fan-tray fails or is removed. Moreover, the status LED may not go turn red when the power supply fails or is removed.

  Workaround: None. (CSCdz55274)

- When a non-blocking gigaport is configured as “unidirectional receive-only” as well as “speed nonegotiation,” once both CLIs are unconfigured, the port link may not come up.

  Workaround: Do one of the following:

  – Avoid configuring both unidirectional receive-only and speed nonegotiation on the same port, because the former places a port in speed nonegotiation mode.

  – Issue **shut** and **no shut** commands to reset the port’s link partner and bring up the port's link. (CSCdz53781)

- When the fan tray is removed from the switch for more than 5 minutes, the following message is displayed on the console and all line cards are reset:

  ```
  %C4K_CHASSIS-2-INSUFFICIENTFANSDETECTED: Too few working fans, the chassis will
  overheat
  ```

  Workaround: None. (CSCdz50817)

- When a Catalyst 4000 Supervisor Engine III or IV is configured to use PBR, and the route-map specifies that the action is a default next-hop, that action is taken only if the ARP resolution for the specified host has already taken place. If the ARP resolution has not taken place, the system does not consider the host to be a valid default next-hop.

  Workaround: Ping the specified host to ensure that it is always in the ARP table. (CSCdz50786)

- If none of a port-channel’s ports support Jumbo Frame, your attempt to change the MTU on the port-channel will change the port-channel's MTU, but not the member ports' MTU. Moreover, none of the member ports are suspended.

  In contrast, if some of the member ports support jumbo frames, this scenario does not happen and the ports that don't support jumbo frames are suspended.

  Workaround: Do not change the port-channel's MTU if none of its member ports support jumbo frames. (CSCdz43350)

- When PBR is configured on a Catalyst 4000 Supervisor Engine III or IV, PBR packets switched by hardware update the access-list or route-map statistics improperly.

  Workaround: None. (CSCdz10171)

- When the WS-X4148-RJ45V card is plugged into a Catalyst 4500 chassis, the power LED “on” does not work. This caveat is present in 12.1(13)EW and all previous software releases.

  Workaround: None. (CSCdz60995)

- With at least 2000 VLAN interfaces configured in the startup-config file, a switch might take at least 10 minutes to boot up. During this time, the switch is unresponsive.

  Workaround: Configure fewer SVIs in the startup config file. (CSCdx91258)

- Disabling IGMP snooping with a large number of groups and VLANs might cause CPU HOG and HOST FLAPPING. If so, you will see messages like the following on the console:

  ```
  %SYS-3-CPUHOG: Task ran for 8692 msec (0/0), process = Exec, PC = 128790.
  %C4K_EBM-4-HOSTFLAPPING: Host 00:10:0B:10:B9:20 in vlan 200 is flapping between port
  Po2 and port Po1
  ```

  Workaround: None. (CSCdy21031)

- When the spanning tree mode is PVST, isolated trunk ports transmit BPDUs with the primary VLAN instead of the secondary VLAN.

  Workaround: Use the **spanning-tree bpduguard enable** interface command to enable BPDU Guard to detect any BPDUs received on private VLAN trunk ports. (CSCdx62226)

- When a secondary VLAN is disabled using the **shutdown** VLAN configuration command and re-enabled using the **no shutdown** VLAN configuration command, any subsequent flooded/multicast packets received on the private VLAN port does not reach all the destinations.

  Workaround: Do not use the **shutdown** and **no shutdown** VLAN configuration command to disable the VLAN. Instead, delete and recreate the secondary VLAN with the proper VLAN type and association configuration. (CSCdy22082)

- When a VLAN filter is applied to filter IP traffic based on Layer 4 information, fragmented packets might not be filtered correctly. Only the initial fragment has all the Layer 4 information. Non-initial fragments do not have any Layer 4 information (e.g., UDP ports, TCP flag, etc.).

  Workaround: If IP packets can be fragmented in your network, program ACLs in the VLAN Map, without any Layer 4 information. (CSCdx84696)

- If an ACL is applied to more than one interface, and any Access Control Entry (ACE) in the ACL is subsequently modified, then the Ternary Content Addressable Memory (TCAM) usage of that ACL is multiplied by the number of interfaces to which the ACL is applied.

  Workaround: Detach the ACL from one interface at a time (without deleting the ACL), and then reattach the ACL to that interface. (CSCdw28603)

Resolved Caveats in Cisco IOS Release 12.1(13)EW1

This section lists the resolved caveats in Release 12.1(13)EW1.

- Non-CDP phones (such as Softphone and VIP) that are connected to a Catalyst 4500 series switch running IOS are not discovered by Cisco Emergency Responder (CER).

  Workaround: None. (CSCin28373)

- When you run “snmpwalk” (or a similar tool) over dot1dTpFdbTable, the system might not report every other consecutive learned host.

  Workaround: Use the **show mac-address** command instead. (CSCdz72134)

- If you enter the **show interface capabilities** command on a Catalyst 4000 family switch running release 12.1(13)EW, the switch reloads unexpectedly; this command is not supported in the 12.1(13)EW release.

  Workaround: None. (CSCdz64100)

- If you have assigned a policer to a policy map, and if you have changed parameters such as rate and burst, the new parameters sometimes do not take effect.

  Workaround: After changing the parameters, first disable and enable global QoS, then disable and enable QoS on the port or VLAN that is using this policy map. (CSCdz75217)

- A Catalyst 4000 family switch might reset itself when you enable a VMPS client as well as multiple ports (for dynamic VLAN assignment).

  Workaround: None. (CSCdz80184)

- A Catalyst 4000 family switch with Supervisor Engine III or IV running release 12.1(12c)EW1 might reload due to an exception on the tcp_putbyte process.

  Workaround: None. (CSCdz69546)

- Policy-based routing (PBR) causes your Catalyst 4000 family switch to shut down when running release 12.1(13)EW.

  Workaround: None. (CSCdz89145)

- When a large number of flows use a congested queue, some non aggressive flows might experience large drops of traffic. When the queue is cleared, the packets flow normally for all the flows.

  Workaround: None. (CSCea19319)

Open Caveats in Cisco IOS Release 12.1(13)EW

This section lists the open caveats in Release 12.1(13)EW.

- Cisco routers and switches running Cisco IOS software and configured to process Internet Protocol version 4 (IPv4) packets are vulnerable to a Denial of Service (DoS) attack. A rare sequence of crafted IPv4 packets sent directly to the device may cause the input interface to stop processing traffic once the input queue is full. No authentication is required to process the inbound packet. Processing of IPv4 packets is enabled by default. Devices running only IP version 6 (IPv6) are not affected. A workaround is available.

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  Workaround: None. (CSCdz55274)

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  Workaround: Do one of the following:

  – Avoid configuring both unidirectional receive-only and speed nonegotiation on the same port, because the former places a port in speed nonegotiation mode.

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  Workaround: None. (CSCdz50817)

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  In contrast, if some of the member ports support jumbo frames, this scenario does not happen and the ports that don't support jumbo frames are suspended.

  Workaround: Do not change the port-channel's MTU if none of its member ports support jumbo frames. (CSCdz43350)

- When PBR is configured on a Catalyst 4000 Supervisor Engine III or IV, PBR packets switched by hardware update the access-list or route-map statistics improperly.

  Workaround: None. (CSCdz10171)

- When the WS-X4148-RJ45V card is plugged into a Catalyst 4500 chassis, the power LED “on” does not work. This caveat is present in 12.1(13)EW and all previous software releases.

  Workaround: None. (CSCdz60995)

- With at least 2000 VLAN interfaces configured in the startup-config file, a switch might take at least 10 minutes to boot up. During this time, the switch is unresponsive.

  Workaround: Configure fewer SVIs in the startup config file. (CSCdx91258)

- Disabling IGMP snooping with a large number of groups and VLANs might cause CPU HOG and HOST FLAPPING. If so, you will see messages like the following on the console:

  ```
  %SYS-3-CPUHOG: Task ran for 8692 msec (0/0), process = Exec, PC = 128790.
  %C4K_EBM-4-HOSTFLAPPING: Host 00:10:0B:10:B9:20 in vlan 200 is flapping between port
  Po2 and port Po1
  ```

  Workaround: None. (CSCdy21031)

- When the spanning tree mode is PVST, isolated trunk ports transmit BPDUs with the primary VLAN instead of the secondary VLAN.

  Workaround: Use the **spanning-tree bpduguard enable** interface command to enable BPDU Guard to detect any BPDUs received on private VLAN trunk ports. (CSCdx62226)

- When a secondary VLAN is disabled using the **shutdown** VLAN configuration command and re-enabled using the **no shutdown** VLAN configuration command, any subsequent flooded/multicast packets received on the private VLAN port does not reach all the destinations.

  Workaround: Do not use the **shutdown** and **no shutdown** VLAN configuration command to disable the VLAN. Instead, delete and recreate the secondary VLAN with the proper VLAN type and association configuration. (CSCdy22082)

- When a VLAN filter is applied to filter IP traffic based on Layer 4 information, fragmented packets might not be filtered correctly. Only the initial fragment has all the Layer 4 information. Non-initial fragments do not have any Layer 4 information (e.g., UDP ports, TCP flag, etc.).

  Workaround: If IP packets can be fragmented in your network, program ACLs in the VLAN Map, without any Layer 4 information. (CSCdx84696)

- If an ACL is applied to more than one interface, and any Access Control Entry (ACE) in the ACL is subsequently modified, then the Ternary Content Addressable Memory (TCAM) usage of that ACL is multiplied by the number of interfaces to which the ACL is applied.

  Workaround: Detach the ACL from one interface at a time (without deleting the ACL), and then reattach the ACL to that interface. (CSCdw28603)

Resolved Caveats in Cisco IOS Release 12.1(13)EW

This section lists the resolved caveats in Release 12.1(13)EW.

- Private VLAN trunks will continue to operate as private trunks after you configure them as normal trunks using the **switchport mode trunk** command. While the trunks are in this state, the interfaces will not show up as private VLAN trunks in the output of the **show vlan private-vlan** command.

  Workaround: To ensure that the ports operate as normal trunks, issue shutdown/no shutdown commands after configuring the ports as normal trunks. (CSCdy40311)

- On systems with redundant supervisors and large and complex configurations, where the system is actively processing startup-config file, the standby supervisor engine may take over from the active supervisor engine in the boot process. If this happens, the following message is displayed on the active supervisor:

  ```
  C4K_REDUNDANCY-4-CONFIGSYNCFAIL: Persistent-config Sync to Standby Supervisor failed
  ```

  and the following messages display on the standby supervisor:

  ```
  C4k_REDUNDANCY-6-SWITCHOVER: Switchover activity detected, changing role from STANDBY
  to ACTIVE
  C4K_REDUNDANCY-6-INIT: Initializing as ACTIVE supervisor
  ```

  Workaround: Keep your startup-config file reasonably small size. (CSCdy02031)

- The CLI erroneously permits enabling 802.1X on ports that are configured as private VLAN trunks and private VLAN access ports. This configuration may result in unexpected behavior.

  Workaround: Don't configure 802.1X on PVLAN ports. (CSCdy23098)

Open Caveats in Cisco IOS Release 12.1(12c)EW4

This section lists the open caveats in release 12.1(12c)EW4.

- Private VLAN trunks will continue to operate as private trunks after you configure them as normal trunks using the **switchport mode trunk** command. While the trunks are in this state, the interfaces will not show up as private VLAN trunks in the output of the **show vlan private-vlan** command.

  Workaround: To ensure that the ports operate as normal trunks, issue shutdown/no shutdown commands after configuring the ports as normal trunks. (CSCdy40311)

- With approximately 2000 or more VLAN interfaces configured in the startup-config file, the switch might take at least 10 minutes to boot up. The switch is unresponsive until it completes the boot.

  Workaround: Configure fewer SVIs in the startup config file. (CSCdx91258)

- Disabling IGMP snooping with a large number of groups and VLANs might cause CPU HOG and HOST FLAPPING. If so, you will see messages like the following on the console:

  ```
  2d07h: %SYS-3-CPUHOG: Task ran for 8692 msec (0/0), process = Exec, PC = 128790.
  2d07h: %C4K_EBM-4-HOSTFLAPPING: Host 00:10:0B:10:B9:20 in vlan 200 is flapping between
  port Po2 and port Po1
  ```

  Workaround: None. (CSCdy21031)

- When the spanning tree mode is PVST, isolated trunk ports transmit BPDUs with the primary VLAN instead of the secondary VLAN.

  Workaround: Use the **spanning-tree bpduguard enable** interface command to enable BPDU Guard to detect any BPDUs received on private VLAN trunk ports. (CSCdx62226)

- When a secondary VLAN is disabled using the **shutdown** VLAN configuration command and re-enabled using the **no shutdown** VLAN configuration command, any subsequent flooded/multicast packets received on the private VLAN port do not reach all the destinations.

  Workaround: Do not use the **shutdown** and **no shutdown** VLAN configuration command to disable the VLAN. Instead, delete and recreate the secondary VLAN with the proper VLAN type and association configuration. (CSCdy22082)

- When a VLAN filter is applied to filter IP traffic based on Layer 4 information, fragmented packets might not be filtered correctly. Only the initial fragment has all the Layer 4 information. Non-initial fragments do not have any Layer 4 information (e.g.: UDP ports, TCP flag, etc.).

  Workaround: If IP packets can be fragmented in your network, program ACLs in the VLAN Map, without any Layer 4 information. (CSCdx84696)

- On systems with redundant supervisors and large and complex configurations, where the system is actively processing startup-config file, the standby supervisor engine may take over from the active supervisor engine in the boot process. If this happens, the following message displays on the active supervisor"

  ```
  C4K_REDUNDANCY-4-CONFIGSYNCFAIL: Persistent-config Sync to Standby Supervisor failed
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  and the following messages display on the standby supervisor:

  ```
  C4k_REDUNDANCY-6-SWITCHOVER: Switchover activity detected, changing role from STANDBY
  to ACTIVE
  C4K_REDUNDANCY-6-INIT: Initializing as ACTIVE supervisor
  ```

  Workaround: Keep your startup-config file reasonably small. (CSCdy02031)

- The CLI erroneously permits enabling 802.1X on ports that are configured as private VLAN trunks and private VLAN access ports. This configuration may result in unexpected behavior.

  Workaround: Don't configure 802.1X on PVLAN ports. (CSCdy23098)

- If an ACL is applied to more than one interface, and any Access Control Entry (ACE) in the ACL is subsequently modified, then the Ternary Content Addressable Memory (TCAM) usage of that ACL is multiplied by the number of interfaces to which the ACL is applied.

  Workaround: Detach the ACL from one interface at a time (without deleting the ACL), and then reattach the ACL to that interface. (CSCdw28603)

Resolved Caveats in Cisco IOS Release 12.1(12c)EW4

This section lists the resolved caveats in Release 12.1(12c)EW4.

- Through normal software maintenance processes, Cisco is removing deprecated functionality. These changes have no impact on system operation or feature availability. (CSCei76358)
- Cisco IOS may permit arbitrary code execution after exploitation of a heap-based buffer overflow vulnerability. Cisco has included additional integrity checks in its software, as further described below, that are intended to reduce the likelihood of arbitrary code execution.

  Cisco has made free software available that includes the additional integrity checks for affected customers.

  This advisory is posted at http://www.cisco.com/warp/public/707/cisco-sa-20051102-timers.shtml. (CSCei61732)

Open Caveats in Cisco IOS Release 12.1(12c)EW3

This section lists the open caveats in release 12.1(12c)EW3.

- Private VLAN trunks will continue to operate as private trunks after you configure them as normal trunks using the **switchport mode trunk** command. While the trunks are in this state, the interfaces will not show up as private VLAN trunks in the output of the **show vlan private-vlan** command.

  Workaround: To ensure that the ports operate as normal trunks, issue shutdown/no shutdown commands after configuring the ports as normal trunks. (CSCdy40311)

- With approximately 2000 or more VLAN interfaces configured in the startup-config file, the switch might take at least 10 minutes to boot up. The switch is unresponsive until it completes the boot.

  Workaround: Configure fewer SVIs in the startup config file. (CSCdx91258)

- Disabling IGMP snooping with a large number of groups and VLANs might cause CPU HOG and HOST FLAPPING. If so, you will see messages like the following on the console:

  ```
  2d07h: %SYS-3-CPUHOG: Task ran for 8692 msec (0/0), process = Exec, PC = 128790.
  2d07h: %C4K_EBM-4-HOSTFLAPPING: Host 00:10:0B:10:B9:20 in vlan 200 is flapping between
  port Po2 and port Po1
  ```

  Workaround: None. (CSCdy21031)

- When the spanning tree mode is PVST, isolated trunk ports transmit BPDUs with the primary VLAN instead of the secondary VLAN.

  Workaround: Use the **spanning-tree bpduguard enable** interface command to enable BPDU Guard to detect any BPDUs received on private VLAN trunk ports. (CSCdx62226)

- When a secondary VLAN is disabled using the **shutdown** VLAN configuration command and re-enabled using the **no shutdown** VLAN configuration command, any subsequent flooded/multicast packets received on the private VLAN port do not reach all the destinations.

  Workaround: Do not use the **shutdown** and **no shutdown** VLAN configuration command to disable the VLAN. Instead, delete and recreate the secondary VLAN with the proper VLAN type and association configuration. (CSCdy22082)

- When a VLAN filter is applied to filter IP traffic based on Layer 4 information, fragmented packets might not be filtered correctly. Only the initial fragment has all the Layer 4 information. Non-initial fragments do not have any Layer 4 information (e.g.: UDP ports, TCP flag, etc.).

  Workaround: If IP packets can be fragmented in your network, program ACLs in the VLAN Map, without any Layer 4 information. (CSCdx84696)

- On systems with redundant supervisors and large and complex configurations, where the system is actively processing startup-config file, the standby supervisor engine may take over from the active supervisor engine in the boot process. If this happens, the following message displays on the active supervisor"

  ```
  C4K_REDUNDANCY-4-CONFIGSYNCFAIL: Persistent-config Sync to Standby Supervisor failed
  ```

  and the following messages display on the standby supervisor:

  ```
  C4k_REDUNDANCY-6-SWITCHOVER: Switchover activity detected, changing role from STANDBY
  to ACTIVE
  C4K_REDUNDANCY-6-INIT: Initializing as ACTIVE supervisor
  ```

  Workaround: Keep your startup-config file reasonably small. (CSCdy02031)

- The CLI erroneously permits enabling 802.1X on ports that are configured as private VLAN trunks and private VLAN access ports. This configuration may result in unexpected behavior.

  Workaround: Don't configure 802.1X on PVLAN ports. (CSCdy23098)

- If an ACL is applied to more than one interface, and any Access Control Entry (ACE) in the ACL is subsequently modified, then the Ternary Content Addressable Memory (TCAM) usage of that ACL is multiplied by the number of interfaces to which the ACL is applied.

  Workaround: Detach the ACL from one interface at a time (without deleting the ACL), and then reattach the ACL to that interface. (CSCdw28603)

Resolved Caveats in Cisco IOS Release 12.1(12c)EW3

This section lists the resolved caveats in Release 12.1(12c)EW3.

- NetFlow Feature Acceleration has been deprecated and removed from Cisco IOS. The global command **ip flow-cache feature-accelerate** will no longer be recognized in any IOS configuration.

  If your router configuration does not currently contain the command **ip flow-cache feature-accelerate**, this change does not affect you.

  The removal of NetFlow Feature Acceleration does not affect any other aspects of Netflow operation, for example Access-list processing. The features are separate and distinct.

  Cisco Express Forwarding (CEF) supercedes the deprecated NetFlow Feature Acceleration.

  Additionally, the following MIB objects and OIDs have been deprecated and removed from the netflow mib (CISCO-NETFLOW-MIB):

  ```
  cnfFeatureAcceleration        1.3.6.1.4.1.9.9.99999.1.3
  cnfFeatureAccelerationEnable  1.3.6.1.4.1.9.9.99999.1.3.1
  cnfFeatureAvailableSlot       1.3.6.1.4.1.9.9.99999.1.3.2
  ```

```
cnfFeatureActiveSlot          1.3.6.1.4.1.9.9.99999.1.3.3
cnfFeatureTable               1.3.6.1.4.1.9.9.99999.1.3.4
cnfFeatureEntry               1.3.6.1.4.1.9.9.99999.1.3.4.1
cnfFeatureType                1.3.6.1.4.1.9.9.99999.1.3.4.1.1
cnfFeatureSlot                1.3.6.1.4.1.9.9.99999.1.3.4.1.2
cnfFeatureActive              1.3.6.1.4.1.9.9.99999.1.3.4.1.3
cnfFeatureAttaches            1.3.6.1.4.1.9.9.99999.1.3.4.1.4
cnfFeatureDetaches            1.3.6.1.4.1.9.9.99999.1.3.4.1.5
cnfFeatureConfigChanges       1.3.6.1.4.1.9.9.99999.1.3.4.1.6
```

(CSCsa81379)

Open Caveats in Cisco IOS Release 12.1(12c)EW2

This section lists the open caveats in release 12.1(12c)EW2.

- Private VLAN trunks will continue to operate as private trunks after you configure them as normal trunks using the **switchport mode trunk** command. While the trunks are in this state, the interfaces will not show up as private VLAN trunks in the output of the **show vlan private-vlan** command.

  Workaround: To ensure that the ports operate as normal trunks, issue shutdown/no shutdown commands after configuring the ports as normal trunks. (CSCdy40311)

- With approximately 2000 or more VLAN interfaces configured in the startup-config file, the switch might take at least 10 minutes to boot up. The switch is unresponsive until it completes the boot.

  Workaround: Configure fewer SVIs in the startup config file. (CSCdx91258)

- Disabling IGMP snooping with a large number of groups and VLANs might cause CPU HOG and HOST FLAPPING. If so, you will see messages like the following on the console:

  ```
  2d07h: %SYS-3-CPUHOG: Task ran for 8692 msec (0/0), process = Exec, PC = 128790.
  2d07h: %C4K_EBM-4-HOSTFLAPPING: Host 00:10:0B:10:B9:20 in vlan 200 is flapping between
  port Po2 and port Po1
  ```

  Workaround: None. (CSCdy21031)

- When the spanning tree mode is PVST, isolated trunk ports transmit BPDUs with the primary VLAN instead of the secondary VLAN.

  Workaround: Use the **spanning-tree bpduguard enable** interface command to enable BPDU Guard to detect any BPDUs received on private VLAN trunk ports. (CSCdx62226)

- When a secondary VLAN is disabled using the **shutdown** VLAN configuration command and re-enabled using the **no shutdown** VLAN configuration command, any subsequent flooded/multicast packets received on the private VLAN port do not reach all the destinations.

  Workaround: Do not use the **shutdown** and **no shutdown** VLAN configuration command to disable the VLAN. Instead, delete and recreate the secondary VLAN with the proper VLAN type and association configuration. (CSCdy22082)

- When a VLAN filter is applied to filter IP traffic based on Layer 4 information, fragmented packets might not be filtered correctly. Only the initial fragment has all the Layer 4 information. Non-initial fragments do not have any Layer 4 information (e.g.: UDP ports, TCP flag, etc.).

  Workaround: If IP packets can be fragmented in your network, program ACLs in the VLAN Map, without any Layer 4 information. (CSCdx84696)

- On systems with redundant supervisors and large and complex configurations, where the system is actively processing startup-config file, the standby supervisor engine may take over from the active supervisor engine in the boot process. If this happens, the following message displays on the active supervisor"

  ```
  C4K_REDUNDANCY-4-CONFIGSYNCFAIL: Persistent-config Sync to Standby Supervisor failed
  ```

  and the following messages display on the standby supervisor:

  ```
  C4k_REDUNDANCY-6-SWITCHOVER: Switchover activity detected, changing role from STANDBY
  to ACTIVE
  C4K_REDUNDANCY-6-INIT: Initializing as ACTIVE supervisor
  ```

  Workaround: Keep your startup-config file reasonably small. (CSCdy02031)

- The CLI erroneously permits enabling 802.1X on ports that are configured as private VLAN trunks and private VLAN access ports. This configuration may result in unexpected behavior.

  Workaround: Don't configure 802.1X on PVLAN ports. (CSCdy23098)

- If an ACL is applied to more than one interface, and any Access Control Entry (ACE) in the ACL is subsequently modified, then the Ternary Content Addressable Memory (TCAM) usage of that ACL is multiplied by the number of interfaces to which the ACL is applied.

  Workaround: Detach the ACL from one interface at a time (without deleting the ACL), and then reattach the ACL to that interface. (CSCdw28603)

Resolved Caveats in Cisco IOS Release 12.1(12c)EW2

This section lists the resolved caveats in Release 12.1(12c)EW2.

- Cisco routers and switches running Cisco IOS software and configured to process Internet Protocol version 4 (IPv4) packets are vulnerable to a Denial of Service (DoS) attack. A rare sequence of crafted IPv4 packets sent directly to the device may cause the input interface to stop processing traffic once the input queue is full. No authentication is required to process the inbound packet. Processing of IPv4 packets is enabled by default. Devices running only IP version 6 (IPv6) are not affected. A workaround is available.

  Workaround: Cisco has made software available, free of charge, to correct the problem. (CSCdz71127, CSCea02355)

  This advisory is available at

  http://www.cisco.com/warp/public/707/cisco-sa-20030717-blocked.shtml

- Under certain conditions, a caveat in the power on self test (POST) may erroneously indicate that good WS-X4014 and WS-X4515 supervisor engines are faulty. When this happens, modules do not come online and the switch cannot be used to forward traffic.

  If the POST incorrectly identifies a good supervisor engine as faulty because of this situation, the POST output will only display the first port on the switch as faulty:

  ```
  Port Traffic: L2 Serdes Loopback ...
  0: F  1: .  2: .  3: .  4: .  5: .  6: .  7: .  8: .  9: . 10: . 11: .
  12: . 13: . 14: . 15: . 16: . 17: . 18: . 19: . 20: . 21: . 22: . 23: .
  24: . 25: . 26: . 27: . 28: . 29: . 30: . 31: .
  ```

  If the POST fails, but the test output does not match the display shown here, your hardware probably is faulty.

This POST behavior is a software issue and has been resolved in 12.1(12c)EW2, 12.1(13)EW2, 12.1(19)EW, and 12.1(20)E images.

Workaround: None. (CSCeb59442)

Open Caveats in Cisco IOS Release 12.1(12c)EW1

This section lists the open caveats in Release 12.1(12c)EW1.

- Cisco routers and switches running Cisco IOS software and configured to process Internet Protocol version 4 (IPv4) packets are vulnerable to a Denial of Service (DoS) attack. A rare sequence of crafted IPv4 packets sent directly to the device may cause the input interface to stop processing traffic once the input queue is full. No authentication is required to process the inbound packet. Processing of IPv4 packets is enabled by default. Devices running only IP version 6 (IPv6) are not affected. A workaround is available.

  Workaround: Cisco has made software available, free of charge, to correct the problem. (CSCdz71127, CSCea02355)

  This advisory is available at this URL:

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  If the POST incorrectly identifies a good supervisor engine as faulty because of this situation, the POST output will only display the first port on the switch as faulty:

  ```
  Port Traffic: L2 Serdes Loopback ...
  0: F  1: .  2: .  3: .  4: .  5: .  6: .  7: .  8: .  9: . 10: . 11: .
  12: . 13: . 14: . 15: . 16: . 17: . 18: . 19: . 20: . 21: . 22: . 23: .
  24: . 25: . 26: . 27: . 28: . 29: . 30: . 31: .
  ```

  If the POST fails, but the test output does not match the display shown here, your hardware probably is faulty.

  This POST behavior is a software issue and has been resolved in 12.1(12c)EW2, 12.1(13)EW2, 12.1(19)EW, and 12.1(20)E images.

  Workaround: None. (CSCeb59442)

- Private VLAN trunks will continue to operate as private trunks after you configure them as normal trunks using the **switchport mode trunk** command. While the trunks are in this state, the interfaces will not show up as private VLAN trunks in the output of the **show vlan private-vlan** command.

  Workaround: To ensure that the ports operate as normal trunks, issue shutdown/no shutdown commands after configuring the ports as normal trunks. (CSCdy40311)

- With approximately 2000 or more VLAN interfaces configured in the startup-config file, the switch might take at least 10 minutes to boot up. The switch is unresponsive until it completes the boot.

  Workaround: Configure fewer SVIs in the startup config file. (CSCdx91258)

- Disabling IGMP snooping with a large number of groups and VLANs might cause CPU HOG and HOST FLAPPING. If so, you will see messages like the following on the console:

  ```
  2d07h: %SYS-3-CPUHOG: Task ran for 8692 msec (0/0), process = Exec, PC = 128790.
  2d07h: %C4K_EBM-4-HOSTFLAPPING: Host 00:10:0B:10:B9:20 in vlan 200 is flapping between
  port Po2 and port Po1
  ```

  Workaround: None. (CSCdy21031)

- When the spanning tree mode is PVST, isolated trunk ports transmit BPDUs with the primary VLAN instead of the secondary VLAN.

  Workaround: Use the **spanning-tree bpduguard enable** interface command to enable BPDU Guard to detect any BPDUs received on private VLAN trunk ports. (CSCdx62226)

- When a secondary VLAN is disabled using the **shutdown** VLAN configuration command and re-enabled using the **no shutdown** VLAN configuration command, any subsequent flooded/multicast packets received on the private VLAN port do not reach all the destinations.

  Workaround: Do not use the **shutdown** and **no shutdown** VLAN configuration command to disable the VLAN. Instead, delete and recreate the secondary VLAN with the proper VLAN type and association configuration. (CSCdy22082)

- When a VLAN filter is applied to filter IP traffic based on Layer 4 information, fragmented packets might not be filtered correctly. Only the initial fragment has all the Layer 4 information. Non-initial fragments do not have any Layer 4 information (e.g.: UDP ports, TCP flag, etc.).

  Workaround: If IP packets can be fragmented in your network, program ACLs in the VLAN Map, without any Layer 4 information. (CSCdx84696)

- On systems with redundant supervisors and large and complex configurations, where the system is actively processing startup-config file, the standby supervisor engine may take over from the active supervisor engine in the boot process. If this happens, the following message displays on the active supervisor"

  ```
  C4K_REDUNDANCY-4-CONFIGSYNCFAIL: Persistent-config Sync to Standby Supervisor failed
  ```

  and the following messages display on the standby supervisor:

  ```
  C4k_REDUNDANCY-6-SWITCHOVER: Switchover activity detected, changing role from STANDBY
  to ACTIVE
  C4K_REDUNDANCY-6-INIT: Initializing as ACTIVE supervisor
  ```

  Workaround: Keep your startup-config file reasonably small. (CSCdy02031)

- The CLI erroneously permits enabling 802.1X on ports that are configured as private VLAN trunks and private VLAN access ports. This configuration may result in unexpected behavior.

  Workaround: Don't configure 802.1X on PVLAN ports. (CSCdy23098)

- If an ACL is applied to more than one interface, and any Access Control Entry (ACE) in the ACL is subsequently modified, then the Ternary Content Addressable Memory (TCAM) usage of that ACL is multiplied by the number of interfaces to which the ACL is applied.

  Workaround: Detach the ACL from one interface at a time (without deleting the ACL), and then reattach the ACL to that interface. (CSCdw28603)

Resolved Caveats in Cisco IOS Release 12.1(12c)EW1

This section lists the resolved caveats in Release 12.1(12c)EW1:

- On a 4507R chassis with dual supervisors, the following message displays during switchover under high CPU utilization:

  ```
  %Error: Opening vlan.dat on STANDBY
  ```

Workaround: After the switch boots, verify that the standby supervisor engine has a valid cat4000_flash:vlan.dat file. If you suspect the file is invalid, copy the valid file using the following command on the active supervisor:

copy cat4000_flash:vlan.dat slavecat4000_flash:vlan.dat

(CSCdy26890)

- No log message is generated when a power supply fails.

  Workaround:.Review the output of the **show power** command to check the status of power supplies. This is the only way to be notified of a supply failure. (CSCdy33518)

- When DHCP snooping, DHCP relay agent and CEF are all enabled on a switch, a DHCP server reply packet that is destined for the DHCP relay agent might get forwarded to the DHCP client.

  Workaround: Either not enable all these features at the same time, or upgrade the switch to the latest maintenance release image that contains the fix for this problem.

- A Catalyst 4000 supervisor engine running 12.1(12c)EW or an earlier release will not link up on a WS-X4424-GB-RJ45 line card interface if it is hard-coded for speed and duplex.

  Workaround: Issue a shutdown/ no shutdown command at the associated interface to bring up the link.

  When you force the speed, the switch port does not auto-detect crossover/straight through cables. In these situations, you must use the correct cable.

  - When connecting the switch port to another networking device, use a crossover cable.
  - When connecting the switch port to a workstation, use a straight through cable. (CSCdy44221)

- When the tcam entries in the ingress VLAN are exhausted, and when DHCP snooping is enabled in the VLAN, the packets that are punted to software for ACL processing might bypass the router ACLs.

  Workaround: None. (CSCdy47753)

- DHCP packets that are relayed by DHCP Relay Agents are treated as IOS internally-generated packets. This means that the output router ACL won't apply to these packets.

  Workaround: Apply an input router ACL to filter out those broadcast DHCP packets before they can be relayed by the Agent. (CSCdy50604)

- DHCP broadcast requests from a DHCP client will bypass router ACLs when DHCP snooping is disabled on the switch.

  Workaround: Either enable the DHCP snooping feature, or use a VACL instead of a router ACL to filter the DHCP packets. (CSCdy62123)

- When you boot diskless-workstations remotely, you might experience slow booting on random ports of the WS-X-4148-RJ45V module when used in conjunction with the Supervisor Engine III.

  Workaround: First, change the duplex to half, then reconfigure to full. (CSCdy67241)

- Under certain conditions, if numerous ACLs are configured on boot-up, some ACLs or QoS policies will not be programmed in the hardware and the following error messages will display:

  ```
  *Sep 19 21:53:17.947: %C4K_HWACLMAN-4-ACLHWPROGERR: <Feature using ACLs>- hardware
  TCAM limit, ...
  *Sep 19 21:53:17.975: %C4K_HWACLMAN-4-ACLHWPROGERRREASON: <Feature using ACLs>- out of
  software acl programming resources.
  ```

  Workaround: Re-apply the ACLs to the appropriate security ACL or QoS policy-map. (CSCdy68681)

- ACLs containing more than six L4 port operators trigger L4 operator expansion. Certain range operators are expanded too broadly, which causes the affected ACEs to match more packets than they should. Less-than and greater-than operators are expanded correctly in all cases. This issue affects only Cisco IOS Release 12.1(12c)EW.

  Workaround: Avoid configuring ACLs that trigger L4 operator expansion. (CSCdy70646)

Open Caveats in Cisco IOS Release 12.1(12c)EW

This section lists the open caveats in Release 12.1(12c)EW.

- Cisco routers and switches running Cisco IOS software and configured to process Internet Protocol version 4 (IPv4) packets are vulnerable to a Denial of Service (DoS) attack. A rare sequence of crafted IPv4 packets sent directly to the device may cause the input interface to stop processing traffic once the input queue is full. No authentication is required to process the inbound packet. Processing of IPv4 packets is enabled by default. Devices running only IP version 6 (IPv6) are not affected. A workaround is available.

  Workaround: Cisco has made software available, free of charge, to correct the problem. (CSCdz71127, CSCea02355)

  This advisory is available at this URL:

  http://www.cisco.com/warp/public/707/cisco-sa-20030717-blocked.shtml

- Under certain conditions, a caveat in the power on self test (POST) may erroneously indicate that good WS-X4014 and WS-X4515 supervisor engines are faulty. When this happens, modules do not come online and the switch cannot be used to forward traffic.

  If the POST incorrectly identifies a good supervisor engine as faulty because of this situation, the POST output will only display the first port on the switch as faulty:

  ```
  Port Traffic: L2 Serdes Loopback ...
  0: F  1: .  2: .  3: .  4: .  5: .  6: .  7: .  8: .  9: . 10: . 11: .
  12: . 13: . 14: . 15: . 16: . 17: . 18: . 19: . 20: . 21: . 22: . 23: .
  24: . 25: . 26: . 27: . 28: . 29: . 30: . 31: .
  ```

  If the POST fails, but the test output does not match the display shown here, your hardware probably is faulty.

  This POST behavior is a software issue and has been resolved in 12.1(12c)EW2, 12.1(13)EW2, 12.1(19)EW, and 12.1(20)E images.

  Workaround: None. (CSCeb59442)

- Private VLAN trunks will continue to operate as private trunks after you configure them as normal trunks using the **switchport mode trunk** command. While the trunks are in this state, the interfaces will not show up as private VLAN trunks in the output of the **show vlan private-vlan** command.

  Workaround: To ensure that the ports operate as normal trunks, issue shutdown/no shutdown commands after configuring the ports as normal trunks. (CSCdy40311)

- With approximately 2000 or more VLAN interfaces configured in the startup-config, the switch might take at least 10 minutes to boot up. The switch is unresponsive until it completes the boot.

  Workaround: Configure fewer SVIs in the startup config. (CSCdx91258)

- Disabling IGMP snooping with a large number of groups and VLANs might cause CPU HOG and HOST FLAPPING. If so, you will see messages like the following on the console:

```
2d07h: %SYS-3-CPUHOG: Task ran for 8692 msec (0/0), process = Exec, PC = 128790.
2d07h: %C4K_EBM-4-HOSTFLAPPING: Host 00:10:0B:10:B9:20 in vlan 200 is flapping between
port Po2 and port Po1
```

  Workaround: None. (CSCdy21031)

- When the spanning tree mode is PVST, isolated trunk ports transmit BPDUs with the primary VLAN instead of the secondary VLAN.

  Workaround: Use the **spanning-tree bpduguard enable** interface command to enable BPDU Guard to detect any BPDUs received on private VLAN trunk ports. (CSCdx62226)

- When a secondary VLAN is disabled using the **shutdown** VLAN configuration command and re-enabled using the **no shutdown** VLAN configuration command, any subsequent flooded/multicast packets received on the private VLAN port does not reach all the destinations.

  Workaround: If possible, do not use the **shutdown** and **no shutdown** VLAN configuration command to disable the VLAN. Instead, delete and recreate the secondary VLAN with the proper VLAN type and association configuration. (CSCdy22082)

- When a VLAN filter is applied to filter IP traffic based on Layer 4 information, fragmented packets may not be filtered correctly. Only the initial fragment has all the Layer 4 information. Non-initial fragments do not have any Layer 4 information (e.g.: UDP ports, TCP flag, etc.).

  Workaround: If IP packets can be fragmented in your network, program ACLs in the VLAN Map, without any Layer 4 information. (CSCdx84696)

- On systems with redundant supervisors and large and complex configurations, where the system is actively processing startup-config, the standby supervisor engine may take over from the active supervisor engine in the boot process. If this happens, the following message displays on the active supervisor:

```
C4K_REDUNDANCY-4-CONFIGSYNCFAIL: Persistent-config Sync to Standby Supervisor failed
```

  and the following messages display on the standby supervisor

```
C4k_REDUNDANCY-6-SWITCHOVER: Switchover activity detected, changing role from STANDBY
to ACTIVE
C4K_REDUNDANCY-6-INIT: Initializing as ACTIVE supervisor
```

  Workaround: Keep your startup-config reasonably small. (CSCdy02031)

- The CLI erroneously permits enabling 802.1X on ports that are configured as private VLAN trunks and private VLAN access ports. This configuration may result in unexpected behavior.

  Workaround: Don't configure 802.1X on PVLAN ports. (CSCdy23098)

- If an ACL is applied to more than one interface, and any Access Control Entry (ACE) in the ACL is subsequently modified, then the Ternary Content Addressable Memory (TCAM) usage of that ACL is multiplied by the number of interfaces to which the ACL is applied.

  Workaround: Detach the ACL from one interface at a time (without deleting the ACL), and then reattach the ACL to that interface. (CSCdw28603)

Resolved Caveats in Cisco IOS Release 12.1(12c)EW

This section lists the resolved caveats in Release 12.1(12c)EW:

- A Catalyst 4006 switch with Supervisor Engine III using Release 12.1(11b)EW might crash when you enter the following command while the port channel set to **channel-no** is in a shutdown state:

  show platform software etherchannel port-channel channel-no

  This command was introduced in software release 12.1(11b)EW. Software release 12.1(8a)EW is not affected by this caveat.

  Workaround: Do not use the above command for a port channel in a shutdown state. (CSCdx47694)

- On a Catalyst 4006 switch with Supervisor Engine III, the output rate in **show interface** command might display a value greater than the bandwidth that the interface can handle. There is no workaround. (CSCdx30670)

- When you use a large number of ACLs with more than 1000 entries each, the switch boot up time will be extended.

  Workaround: Use extended named ACLs. Named ACLs specified in the ACL config mode do not exhibit this behavior. (CSCdw20032)

- A Cisco router configured for Multicast Source Discovery Protocol (MSDP) can experience frequent MSDP session resets with the MSDP peers of the router. This situation is often caused by excessive Source, Group (S, G) information that should be contained in a domain being passed to the outside, resulting in additional entries in the Source-Active (SA) cache.

  Workarounds: Determine whether the routers have the SA filters configured properly by reviewing the MSDP SA filter recommendations posted at the following URL: ftp://ftpeng.cisco.com/ipmulticast/config-notes/msdp-sa-filter.txt

  Determine whether the router is running a Cisco IOS image that has the correction for CSCdr93446 (MSDP: Reducing SA storms and session resets (MSDP rearchitect)).

  Review the output of the **show ip msdp sa-cache** EXEC command to see if some of the SAs can be filtered based on the source address, the Rendezvous point (RP) address, or the autonomous system (AS) number. (CSCdw35003)

- If you configure “inst 1 vlan 1,” topology change BPDUs are sent for 35 second rather than 2* hello time in the MST neighbor. There is no workaround. (CSCdy30488)

Open Caveats in Cisco IOS Release 12.1(11b)EW1

This section lists the open caveats in Release 12.1(11b)EW1:

- If you configure “inst 1 vlan 1,” typology change BPDUs are sent for 35 second rather than 2* hello time in the MST neighbor. There is no workaround. (CSCdy30488)

- A Catalyst 4006 switch with Supervisor Engine III using Release 12.1(11b)EW might crash when you enter the following command while the port channel set to **channel-no** is in a shutdown state:

  show platform software etherchannel port-channel channel-no

  This command was introduced in software release 12.1(11b)EW. Software release 12.1(8b)EW is not affected by this caveat.

  Workaround: Do not use the above command for a port channel in a shutdown state. (CSCdx47694)

- On a Catalyst 4006 switch with Supervisor Engine III, the output rate in **show interface** command might display a value greater than the bandwidth that the interface can handle.

  Workaround: None. (CSCdx30670)

- When you use a large number of ACLs with more than 1000 entries, the switch can take more than five minutes to boot up.

  Workaround: Use extended named ACLs. Named ACLs specified in the ACL config mode do not exhibit this behavior. (CSCdw20032)

- Under some conditions, the following error message will appear:

  ```
  3d03h: %FIB-4-FIBIDB: Missing cef idb for GigabitEthernet2/6 during address ch
  ```

  When this happens, traffic to or from that interface will not be received or forwarded correctly.

  Workaround: Functionality might be restored by bringing the interface administratively down and up, or by disabling and re-enabling IP routing. (CSCdx37609)

- If an ACL is applied to more than one interface, and any Access Control Entry (ACE) in the ACL is subsequently modified, then the Ternary Content Addressable Memory (TCAM) usage of that ACL is multiplied by the number of interfaces to which the ACL is applied.

  Workaround: Detach the ACL from one interface at a time (without deleting the ACL), and then reattach the ACL to that interface. (CSCdw28603)

Resolved Caveats in Cisco IOS Release 12.1(11b)EW1

This section lists the resolved caveats in Release 12.1(11b)EW1:

- Under some conditions, the Supervisor Engine III (WS-X4014) might stop switching traffic on all connected ports. Should this occur, all incoming data traffic will be dropped.

  When the switch enters this state, the NoPacketBuffAvailOrCdmFifoOverruns counter will increment on all ports that have received incoming data traffic. You can display the contents of the NoPacketBuffAvailOrCdmFifoOverruns counter by entering the **show platform software interface statistics** command.

  Workaround: This condition is temporary and can be resolved by resetting the switch. (CSCdx66345)

- When burst CPU traffic conditions (low CPU traffic combined with intermittent bursts of routing updates) occur, packets sent to the CPU can be lost. This traffic interruption can occur for less than one second or for a few minutes. No intervention is required, the switch recovers automatically. (CSCdy06162)

Open Caveats in Cisco IOS Release 12.1(11b)EW

This section lists the open caveats in Release 12.1(11b)EW:

- Under some conditions, the Supervisor Engine III (WS-X4014) might stop switching traffic on all connected ports. Should this occur, all incoming data traffic will be dropped.

  When the switch enters this state, the NoPacketBuffAvailOrCdmFifoOverruns counter will increment on all ports that have received incoming data traffic. You can display the contents of the NoPacketBuffAvailOrCdmFifoOverruns counter by entering the **show platform software interface statistics** command.

Workaround: This condition is temporary and can be resolved by resetting the switch. (CSCdx66345)

- When burst CPU traffic conditions (low CPU traffic combined with intermittent bursts of routing updates) occur, packets sent to the CPU can be lost. This traffic interruption can occur for less than one second or for a few minutes. No intervention is required, the switch recovers automatically. (CSCdy06162)
- A Catalyst 4006 switch with Supervisor Engine III using Release 12.1(11b)EW might crash when you enter the following command while the port channel set to **channel-no** is in a shutdown state:

  show platform software etherchannel port-channel channel-no

  This command was introduced in software release 12.1(11b)EW. Release 12.1(8b)EW is not affected by this caveat.

  Workaround: Do not use the above command for a port channel in a shutdown state. (CSCdx47694)
- On a Catalyst 4006 switch with Supervisor Engine III, the output rate in **show interface** command might display a value greater than the bandwidth that the interface can handle. There is no workaround. (CSCdx30670)
- When you use a large number of ACLs with more than 1000 entries, the switch can take more than five minutes to boot up.

  Workaround: Use extended named ACLs. Named ACLs specified in the ACL config mode do not exhibit this behavior. (CSCdw20032)
- Under some conditions, the following error message will appear:

  ```
  3d03h: %FIB-4-FIBIDB: Missing cef idb for GigabitEthernet2/6 during address ch
  ```

  When this happens, traffic to or from that interface will not be received or forwarded correctly.

  Workaround: Functionality might be restored by bringing the interface administratively down and up, or by disabling and re-enabling IP routing. (CSCdx37609)
- A Cisco router configured for Multicast Source Discovery Protocol (MSDP) can experience frequent MSDP session resets with the MSDP peers of the router. This situation is often caused by excessive Source, Group (S, G) information that should be contained in a domain being passed to the outside, resulting in additional entries in the Source-Active (SA) cache.

  Workarounds: Determine whether the routers have the SA filters configured properly by reviewing the MSDP SA filter recommendations posted at the following URL: ftp://ftpeng.cisco.com/ipmulticast/config-notes/msdp-sa-filter.txt

  Determine whether the router is running a Cisco IOS image that has the correction for CSCdr93446 (MSDP: Reducing SA storms and session resets (MSDP rearchitect)).

  Review the output of the **show ip msdp sa-cache** EXEC command to see if some of the SAs can be filtered based on the source address, the Rendezvous point (RP) address, or the autonomous system (AS) number. (CSCdw35003)
- If an ACL is applied to more than one interface, and any Access Control Entry (ACE) in the ACL is subsequently modified, then the Ternary Content Addressable Memory (TCAM) usage of that ACL is multiplied by the number of interfaces to which the ACL is applied.

  Workaround: Detach the ACL from one interface at a time (without deleting the ACL), and then reattach the ACL to that interface. (CSCdw28603)

Resolved Caveats in Cisco IOS Release 12.1(11b)EW

This section lists the resolved caveats in Release 12.1(11b)EW:

- In the **show power** and **show environment** commands, the status of the Power Entry Module (PEM) is reported incorrectly. If the status of the PEM is listed as *bad*, it is actually good, and if the status is listed as *good,* it is actually bad. This has no affect on system operation. n software release 12.1(8a)EW1, the PEM is supported only in the **show** commands. (CSCdx05522)
- When a large number of ports (such as 240) have joined a large number of multicast groups, entering the **clear ip igmp group** command to delete IGMP group cache entries can sometimes reboot a Catalyst 4006 switch with Supervisor Engine III running Cisco IOS Release 12.1(8a)EW.

  Workaround: Do not clear the groups all at once. Instead, clear each IGMP group cache entry separately. (CSCdw46417)
- Occasionally, a switch may have errors when reading register status. When this occurs, the switch logs the message instead of recovering from the error by attempting to read the register status again. The hardware is not actually bad.There is no workaround. (CSCdx52952)
- Typing **Ctrl-/** when attached to the console port will cause the switch to reboot. There is no workaround. (CSCdw06454)
- If you create Switched Virtual Interfaces (SVI) for both a primary VLAN and secondary VLAN and then delete them, a subsequent association between the VLANs the switch could reboot your switch.

  Workaround: Don not create associations between VLANs if the SVI of the primary VLAN has been deleted. (CSCdw50014)
- Packets that are software-generated or software-forwarded are not transmitted in a SPAN session. This includes Layer 2 control packets, such as CDP or spanning tree BPDUs, and packets forwarded by software such as FIB, or adjacency overload scenarios. There is no workaround. (CSCdv34494)
- In an ACL, the **fragment** keyword is ignored when the protocol is **ip**. For all other protocols the keyword is applied to traffic as expected.

  Workaround: Replace the **permit ip any any fragment** command with the following commands:

  ```
  permit 1 any any fragment
  permit 2 any any fragment
  permit 255 any any fragment
  ```
  (CSCdw39872)
- The **show platform hardware monitor** command may corrupt the stack if it is invoked when a VSPAN session or a PSPAN session with many source interfaces is configured on the switch. There is no workaround; to be safe, do not use this command on switches running Cisco IOS Release 12.1(8a)EW. (CSCdw59733)

Open Caveats in Cisco IOS Release 12.1(8a)EW1

This section lists the open caveats in Release 12.1(8a)EW1:

- In the **show power** and **show environment** commands, the status of the Power Entry Module (PEM) is reported incorrectly. If the status of the PEM is listed as *bad*, it is actually good, and if the status is listed as *good,* it is actually bad. This has no affect on system operation. n software release 12.1(8a)EW1, the PEM is supported only in the **show** commands. (CSCdx05522)
- When a large number of ports (such as 240) have joined a large number of multicast groups, entering the **clear ip igmp group** command to delete IGMP group cache entries can sometimes reboot a Catalyst 4006 switch with Supervisor Engine III running Cisco IOS Release 12.1(8a)EW.

Workaround: Do not clear the groups all at once. Instead, clear each IGMP group cache entry separately. (CSCdw46417)

- When you use a large number of ACLs with more than 1000 entries, the switch can take more than five minutes to boot up.

  Workaround: Use extended named ACLs. Named ACLs specified in the ACL config mode do not exhibit this behavior. (CSCdw20032)

- A Cisco router configured for Multicast Source Discovery Protocol (MSDP) can experience frequent MSDP session resets with the MSDP peers of the router. This situation is often caused by excessive source, group (S, G) information that should be contained in a domain being passed to the outside, resulting in additional entries in the Source-Active (SA) cache.

  Workarounds: Determine if the routers have the SA filters configured properly by reviewing the MSDP SA filter recommendations posted at the following URL: ftp://ftpeng.cisco.com/ipmulticast/config-notes/msdp-sa-filter.txt

  Determine if the router is running a Cisco IOS image that has the fix for CSCdr93446 (MSDP: Reducing SA storms and session resets (MSDP rearchitect)).

  Review the output of the **show ip msdp sa-cache** EXEC command to see if some of the SAs can be filtered based on the source address, the Rendezvous point (RP) address, or the autonomous system (AS) number. (CSCdw35003)

- Typing **Ctrl-/** when attached to the console port will cause the switch to reboot. There is no workaround. (CSCdw06454)

- If you create Switched Virtual Interfaces (SVI) for both a primary VLAN and secondary VLAN and then delete them, a subsequent association between the VLANs the switch could reboot your switch.

  Workaround: Don not create associations between VLANs if the SVI of the primary VLAN has been deleted. (CSCdw50014)

- In an ACL, the **fragment** keyword is ignored when the protocol is **ip**. For all other protocols the keyword is applied to traffic as expected.

  Workaround: Replace the **permit ip any any fragment** command with the following commands:

  ```
  permit 1 any any fragment
  permit 2 any any fragment
  permit 255 any any fragment
  ```
  (CSCdw39872)

- Packets that are software-generated or software-forwarded are not transmitted in a SPAN session. This includes Layer 2 control packets, such as CDP or spanning tree BPDUs, and packets forwarded by software such as FIB, or adjacency overload scenarios. There is no workaround. (CSCdv34494)

- If an ACL is applied to more than one interface, and any ACE in the ACL is subsequently modified, then the TCAM usage of that ACL is multiplied by the number of interfaces to which the ACL is applied.

  Workaround: detach the ACL from one interface at a time (without deleting the ACL), and then reattach the ACL to that interface. (CSCdw28603)

- The **show platform hardware monitor** command may corrupt the stack if it is invoked when a VSPAN session or a PSPAN session with many source interfaces is configured on the switch. There is no workaround; to be safe, do not use this command on switches running Cisco IOS Release 12.1(8a)EW. (CSCdw59733)

Resolved Caveats in Cisco IOS Release 12.1(8a)EW1

This section lists the resolved caveats in Release 12.1(8a)EW1:

- An error can occur with management protocol processing. Please use the following URL for further information:

  http://www.cisco.com/cgi-bin/bugtool/onebug.pl?bugid=CSCdw65903

  (CSCdw65903)

Open Caveats in Cisco IOS Release 12.1(8a)EW

This section lists the open caveats in Release 12.1(8a)EW:

- Under some conditions, the Supervisor Engine III (WS-X4014) might stop switching traffic on all connected ports. Should this occur, all incoming data traffic will be dropped.

  When the switch enters this state, the NoPacketBuffAvailOrCdmFifoOverruns counter will increment on all ports that have received incoming data traffic. You can display the contents of the NoPacketBuffAvailOrCdmFifoOverruns counter by entering the **show platform software interface statistics** command.

  Workaround: This condition is temporary and can be resolved by resetting the switch. (CSCdx66345)

- In the **show power** and **show environment** commands, the status of the Power Entry Module (PEM) is reported incorrectly. If the status of the PEM is listed as *bad*, it is actually good, and if the status is listed as *good,* it is actually bad. This has no affect on system operation. n software release 12.1(8a)EW1, the PEM is supported only in the **show** commands. (CSCdx05522)

- Typing **Ctrl-/** when attached to the console port will cause the switch to reboot. There is no workaround. (CSCdw06454)

- When a large number of ports (such as 240) have joined a large number of multicast groups, entering the **clear ip igmp group** command to delete IGMP group cache entries can sometimes reboot a Catalyst 4006 switch with Supervisor Engine III running Cisco IOS Release 12.1(8a)EW.

  Workaround: Do not clear the groups all at once. Instead, clear each IGMP group cache entry separately. (CSCdw46417)

- When you use a large number of ACLs with more than 1000 entries, the switch can take more than five minutes to boot up.

  Workaround: Use extended named ACLs. Named ACLs specified in the ACL config mode do not exhibit this behavior. (CSCdw20032)

- A Cisco router configured for Multicast Source Discovery Protocol (MSDP) can experience frequent MSDP session resets with the MSDP peers of the router. This situation is often caused by excessive source, group (S, G) information that should be contained in a domain being passed to the outside, resulting in additional entries in the Source-Active (SA) cache.

  Workarounds: Determine if the routers have the SA filters configured properly by reviewing the MSDP SA filter recommendations posted at the following URL: ftp://ftpeng.cisco.com/ipmulticast/config-notes/msdp-sa-filter.txt

  Determine if the router is running a Cisco IOS image that has the fix for CSCdr93446 (MSDP: Reducing SA storms and session resets (MSDP rearchitect)).

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- If you create Switched Virtual Interfaces (SVI) for both a primary VLAN and secondary VLAN and then delete them, a subsequent association between the VLANs the switch could reboot your switch.

  Workaround: Don not create associations between VLANs if the SVI of the primary VLAN has been deleted. (CSCdw50014)

- If an ACL is applied to more than one interface, and any ACE in the ACL is subsequently modified, then the TCAM usage of that ACL is multiplied by the number of interfaces to which the ACL is applied.

  Workaround: detach the ACL from one interface at a time (without deleting the ACL), and then reattach the ACL to that interface. (CSCdw28603)

- In an ACL, the **fragment** keyword is ignored when the protocol is **ip**. For all other protocols the keyword is applied to traffic as expected.

  Workaround: Replace the **permit ip any any fragment** command with the following commands:

  ```
  permit 1 any any fragment
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  permit 255 any any fragment
  ```
  (CSCdw39872)

- Packets that are software-generated or software-forwarded are not transmitted in a SPAN session. This includes Layer 2 control packets, such as CDP or spanning tree BPDUs, and packets forwarded by software such as FIB, or adjacency overload scenarios. There is no workaround. (CSCdv34494)

- The **show platform hardware monitor** command may corrupt the stack if it is invoked when a VSPAN session or a PSPAN session with many source interfaces is configured on the switch. There is no workaround; to be safe, do not use this command on switches running Cisco IOS Release 12.1(8a)EW. (CSCdw59733)

Resolved Caveats in Cisco IOS Release 12.1(8a)EW

There are no resolved caveats in software release 12.1(8a)EW.

Troubleshooting

These sections provide troubleshooting guidelines for the Catalyst 4000 family running IOS supervisor engines:

- Netbooting from the ROMMON, page 286
- Troubleshooting at the System Level, page 286
- Troubleshooting Modules, page 287
- Troubleshooting MIBs, page 287

Netbooting from the ROMMON

Netbooting using a boot loader image is not supported. Instead, use one of the following options to boot an image:

1. Boot from a CompactFlash card by entering the following command:

   ```
   rommon 1> boot slot0:<bootable_image>
   ```

2. Use ROMMON TFTP boot.

   The ROMMON TFTP boot is very similar to the BOOTLDR TFTP boot, except that:

   - the BOOTLDR variable should *not* be set
   - the TFTP server must be accessible from the Ethernet management port on the supervisor engine.

   To boot from ROMMON, perform the following tasks while in ROMMON mode:

a. Ensure that the Ethernet management port on the supervisor engine is physically connected to the network.

b. Verify that bootloader environment is not set by entering the **unset bootldr** command.

c. Set IP address of the Ethernet management port on the supervisor engine by entering the following command: **set interface fa1** *ip_address*> <*ip_mask*

   For example, to set the supervisor engine Ethernet port with an IP address 172.16.1.5 and IP mask 255.255.255.0, enter the following command:

   ```
   rommon 2> set interface fa1 172.16.1.5 255.255.255.0
   ```

d. Set default gateway for the Ethernet management port on the supervisor engine by entering the following command: **set ip route default** *gateway_ip_address*. The default gateway should be directly connected to the supervisor engine Ethernet management port subnet.

e. Ping the TFTP server to ensure that there is connectivity to the server from the Ethernet management port on the supervisor engine by entering the following command: **ping** <*tftp_server_ip_address*>.

f. Once the ping is successful, boot the image from the TFTP server by entering the following command: **boot tftp://***tftp_server_ip_address*>**/**<*image_path_and_file_name*

   For example, to boot the image name cat4000-is-mz.160 located on the TFTP server 172.16.1.8, enter the following command:

   ```
   rommon 3> boot tftp://172.16.1.8/tftpboot/cat4000-is-mz
   ```

Troubleshooting at the System Level

This section contains troubleshooting guidelines for system-level problems:

- When the system is booting and running power-on diagnostics, do not reset the switch.
- Ensure that you do not mix the serial and Ethernet cables plugged into the supervisor engine. The Fast Ethernet port (10/100 MGT) on the supervisor engine is inoperative in all Catalyst 4500 Cisco IOS releases. An Ethernet cable plugged into the Fast Ethernet port is active only in ROMMON mode.

Troubleshooting Modules

This section contains troubleshooting guidelines for modules:

- When you hot insert a module into a chassis, always use the ejector levers on the front of the module to seat the backplane pins properly. Inserting a module without using the ejector levers might cause the supervisor engine to display incorrect messages about the module. For module installation instructions, refer to the *Catalyst 4500 Series Module Installation Guide*.
- Whenever you connect an interface that has duplex set to autonegotiate to an end station or another networking device, ensure that the other device is configured for autonegotiation as well. If the other device is not set to autonegotiate, the port set to autonegotiate will remain in half-duplex mode, which can cause a duplex mismatch resulting in packet loss, late collisions, and line errors on the link.

Troubleshooting MIBs

For general information on MIBs, RMON groups, and traps, refer to the Cisco public MIB directory (http://www.cisco.com/public/sw-center/netmgmt/cmtk/mibs.shtml). For information on the specific MIBs supported by the Catalyst 4500 series switches, refer to the Catalyst 4000 MIB Support List located at ftp://ftp.cisco.com/pub/mibs/supportlists/cat4000/cat4000-supportlist.html.

Related Documentation

These sections describe the documentation available for the Cisco IOS software for the Catalyst 4500 series switch. These publications consist of hardware and software installation guides, Cisco IOS configuration and command references, system error messages, feature modules, and other publications. Documentation is available electronically or in printed form.

Use these release notes with the publications listed in the following sections:

- Release-Specific Publications, page 287
- Platform-Specific Publications, page 288
- Cisco IOS Software Documentation Set, page 288

Release-Specific Publications

These publications are specific to Release 12.2 and are located on Cisco.com:

- *Cross-Platform Release Notes for Cisco IOS Release 12.2*

  On Cisco.com at
  Technical Documents: **Documentation Home Page**: **Cisco IOS Software Configuration**: **Cisco IOS Release 12.2**
  http://www.cisco.com/univercd/cc/td/doc/product/software/ios121/121relnt/xprn121/index.htm
- Product bulletins, field notices, and other release-specific publications on Cisco.com at **Technical Documents**
- *Caveats for Cisco IOS Release 12.2*

  As a supplement to the caveats listed in the "Caveats" section on page 62, see the *Caveats for Cisco IOS Release 12.2* publication.

On Cisco.com at
Technical Documents: Documentation Home Page: **Cisco IOS Software Configuration**: **Cisco IOS Release 12.2**: **Caveats**

Note If you have an account on Cisco.com, you can use Bug Navigator II to find caveats of any severity for any release. To reach Bug Navigator II, go to Cisco.com and click **Login**. Then go to **Software Center: Cisco IOS Software: Cisco Bugtool Navigator II**. Another option is to go to http://www.cisco.com/support/bugtools.

Platform-Specific Publications

These publications are available for the Catalyst 4500 series switch running the Cisco IOS software at the following URL:
http://www.cisco.com/univercd/cc/td/doc/product/lan/cat4000/12_1_18/index.htm

- *Catalyst 4500 Series Switch Cisco IOS Software Configuration Guide*
- *Catalyst 4500 Series Switch Cisco IOS Command Reference*
- *Catalyst 4500 Series Switch Cisco IOS System Message Guide*

Cisco IOS Software Documentation Set

The Cisco IOS software documentation set consists of the Cisco IOS configuration guides, Cisco IOS command references, and several other supporting publications.

Documentation Modules

Each module in the Cisco IOS documentation set consists of two books: a configuration guide and a corresponding command reference. Chapters in a configuration guide describe protocols, configuration tasks, and Cisco IOS software functionality and contain comprehensive configuration examples. Chapters in a command reference provide complete command syntax information. You can use each configuration guide in conjunction with its corresponding command reference. On Cisco.com, two master hot-linked publications provide information for the Cisco IOS software documentation set.

On Cisco.com at:
Technical Documents: Documentation Home Page: Cisco IOS Software Configuration: Cisco IOS Release 12.2: Configuration Guides and Command References

Release 12.2 Documentation Set

The following table describes the contents of the Cisco IOS Release 12.2 software documentation set, which is available in electronic form and orderable in printed form.

On Cisco.com at
Technical Documents: Documentation Home Page: Cisco IOS Software Configuration: Cisco IOS Release 12.2

Books	Major Topics
• *Cisco IOS Configuration Fundamentals Configuration Guide* • *Cisco IOS Configuration Fundamentals Command Reference*	Cisco IOS User Interfaces Cisco IOS File Management Cisco IOS System Management
• *Cisco IOS Interface Configuration Guide* • *Cisco IOS Interface Command Reference*	Interface Configuration Overview Configuring LAN Interfaces Configuring Serial Interfaces Configuring Logical Interfaces
• *Cisco IOS IP and IP Routing Configuration Guide* • *Cisco IOS IP and IP Routing Command Reference*	IP Addressing and Services IP Routing Protocols IP Multicast
• *Cisco IOS Multiservice Applications Configuration Guide* • *Cisco IOS Multiservice Applications Command Reference*	Multiservice Applications Overview Voice Video Broadband
• *Cisco IOS Quality of Service Solutions Configuration Guide* • *Cisco IOS Quality of Service Solutions Command Reference*	Quality of Service Overview Classification Congestion Management Congestion Avoidance Policing and Shaping signaling Link Efficiency Mechanisms Quality of Service Solutions
• *Cisco IOS Security Configuration Guide* • *Cisco IOS Security Command Reference*	Security Overview Authentication, Authorization, and Accounting (AAA) Security Server Protocols Traffic Filtering and Firewalls IP Security and Encryption Other Security Features
• *Cisco IOS Switching Services Configuration Guide* • *Cisco IOS Switching Services Command Reference*	Cisco IOS Switching Services Overview Cisco IOS Switching Paths Cisco Express Forwarding NetFlow Switching MPLS Switching Multilayer Switching Multicast Distributed Switching Virtual LANs LAN Emulation
• *New Features in 12.2-Based Limited Lifetime Releases* • *New Features in Release 12.2 T* • Release Notes (release note and caveat documentation for 12.2-based releases and various platforms) • *Cisco IOS Debug Command Reference* • *Cisco IOS Dial Services Quick Configuration Guide*	

Notices

The following notices pertain to this software license.

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This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit (http://www.openssl.org/).

This product includes cryptographic software written by Eric Young (eay@cryptsoft.com).

This product includes software written by Tim Hudson (tjh@cryptsoft.com).

License Issues

The OpenSSL toolkit stays under a dual license, i.e. both the conditions of the OpenSSL License and the original SSLeay license apply to the toolkit. See below for the actual license texts. Actually both licenses are BSD-style Open Source licenses. In case of any license issues related to OpenSSL please contact openssl-core@openssl.org.

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This product includes cryptographic software written by Eric Young (eay@cryptsoft.com). This product includes software written by Tim Hudson (tjh@cryptsoft.com).

Original SSLeay License:

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This package is an SSL implementation written by Eric Young (eay@cryptsoft.com).

The implementation was written so as to conform with Netscapes SSL.

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Obtaining Documentation, Obtaining Support, and Security Guidelines

For information on obtaining documentation, obtaining support, providing documentation feedback, security guidelines, and also recommended aliases and general Cisco documents, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:

http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html

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Release Notes for the Catalyst 4500 Series Switch, Cisco IOS Release 12.2(40)SG
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